DRAFT

Quino Checkerspot Butterfly Amendment

to the

Multiple Species Conservation Program

County of San Diego Subarea Plan

March 19, 2003

Multiple Species Conservation Program
County of San Diego Subarea Plan
Quino Checkerspot Butterfly Amendment

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Acronyms

AMSL	Above mean sea level
ASMDs	Area-specific Management Directives
BLM	Bureau of Land Management
BMO	County of San Diego Biological Mitigation Ordinance
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFD	Communities Facilities District
EIR	Environmental Impact Report
ESA	Endangered Species Act
FMP	Framework Management Plan
HCP	Habitat Conservation Plan
HMCT	Habitat Management Technical Committee
IA	Implementing Agreement
MLJ	Metropolitan-Lakeside-Jamul Segment
MSCP	Multiple Species Conservation Program
NCCP	Natural Communities Conservation Planning Act
NEPA	National Environmental Policy Act
OHV	Off-highway recreational vehicle
PCHD	Proposed critical habitat designation
PMA	Pre-approved Mitigation Area
POM	Otay Ranch Preserve Owner/Manager
QCB	Quino checkerspot butterfly
QMU	Quino Management Unit
RMP	Resource Management Plan
SANDAG	San Diego Association of Governments
SDG&E	San Diego Gas & Electric
SDNWR	San Diego National Wildlife Refuge
TET	The Environmental Trust
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

The Multiple Species Conservation Program (MSCP) is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species and the preservation of natural vegetation communities in San Diego County. The MSCP addresses the potential impacts of urban growth, natural habitat loss and species endangerment and creates a plan to mitigate for the potential loss of Covered Species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area. The County of San Diego Subarea Plan, adopted October 22, 1997, implements the MSCP within certain portions of the unincorporated areas under the County's jurisdiction. This document is an amendment to the County's Subarea Plan.

The Subarea Plan forms the basis for a Federal 10(a)(1)(B) permit and State 2835 permit. In addition, an Implementing Agreement (IA), a contract between the County and the Wildlife Agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Game [CDFG]), ensures implementation will be completed based upon the Subarea Plan. The Subarea Plan and its associated IA establish the conditions under which the County of San Diego, for the benefit of itself and of public and private landowners and other land development proponents within its Subarea boundaries, received from the Wildlife Agencies certain long-term Take Authorizations which allow the taking of certain Covered Species incidental to land development and other lawful land uses which are authorized by the County.

1.1 GOALS AND OBJECTIVES

The federal-listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; henceforth referred to as 'QCB') was not included as a Covered Species under the MSCP Subregional Plan or County Subarea Plan. The Environmental Impact Report/Environmental Impact Statement (City of San Diego 1997: 4.3-17) stated the reason: "Unknown conservation level and lack of assurances that Plan will protect preferred habitat (mesa tops/grasslands) and connections to known source populations."

The overriding goal of this Amendment is to meet the long-term conservation needs of this species within the County's MSCP Subarea, consistent with the requirements for take authorization under Section 10(a) of the federal Endangered Species Act. Upon approval of this Amendment, therefore, the QCB will be included as a Covered Species subject to incidental take under the Subarea Plan. Such authorization is necessary because otherwise lawful activities associated with construction of public and private projects in the Subarea will result in the modification and destruction of QCB habitat despite the proposed minimization and mitigation program.

The County of San Diego has prepared this Subarea Plan Amendment with the specific intent to meet the following biological objectives:

1. Conserve a sufficient amount of QCB habitat to ensure long-term conservation, while minimizing changes to the existing MSCP designations;

2. Maintain QCB habitat connectivity along key habitat linkages within the Subarea;

3. Provide adaptive management of the preserve for the benefit of the QCB (along with other Covered Species);

4. Monitor the status of QCB habitat and populations in the preserve;

5. Provide assurances of adequate funding for management and monitoring activities; and

6. Minimize project impacts to QCB.

1.2 PURPOSE AND NEED

This amendment is being prepared to accomplish two primary purposes:

1. To provide for the long-term viability of the QCB in the Subarea; and

2. To facilitate and improve certainty of development outside of preserve areas.

The objectives presented in Section 1.1 represent a suite of actions the County intends to undertake in order to assist in the conservation of the QCB. They are based in part on the recommendations contained in the QCB Recovery Plan (January 2001), prepared by the USFWS in consultation with the Recovery Team, a group of independent experts on the species. The Recovery Plan presents the tasks necessary to ultimately reclassify the QCB to threatened and ensure the species' long-term conservation, based on the best available scientific information and expert opinions. This represents the best available direction on the actions required for the conservation and recovery of the species. The County believes that implementation of the above-stated objectives will provide for the long-term viability of the QCB in the Subarea, and may also contribute to recovery of the species.

At the time of its listing in 1997, the QCB was at such low densities that it was thought to possibly be extinct (62 FR 2313). It was not, therefore, expected to present a substantial impediment to development at the time the MSCP was approved. Over the last several years, however, a number of observations have been made in the Subarea. In particular, 2001 (in which storms were relatively evenly spaced and late in the season) resulted in extensive QCB observations in the undeveloped areas of the southernmost portion of the County. In the absence of an amendment to the MSCP, each individual landowner would need to process an individual Section 10(a)(1)(B) permit in order to proceed with planned development necessary to provide housing and other necessary services for the County's growing population. This is a time-consuming and expensive process, which is contrary to the MSCP's stated goal of facilitating and improving the certainty of development outside the preserve area. This Amendment works through the existing MSCP framework to include the QCB as a Covered Species, thereby recapturing the certainty intended under the MSCP.

Federal Requirements

Section 9 of the federal Endangered Species Act (ESA) prohibits taking species listed by the USFWS as threatened or endangered. As defined in the ESA, "taking" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to engage in any such conduct." Harm and harassment are defined to include habitat modification or degradation that kills or injures wildlife, or significantly disrupts normal behavioral patterns including breeding, feeding or sheltering. In recognition that take cannot always be avoided, however, Section 10(a) of the ESA includes provisions for takings that are incidental to, but not the purpose of, otherwise lawful activities.

This Amendment would be in compliance with the mandatory requirements of a Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the ESA, as amended. Under Section 10(a)(1)(B), the USFWS (via powers delegated by the Secretary of the Interior) is authorized to approve "incidental take" permits, provided that the applicant has met certain conditions. As described in the Code of Federal Regulations and conservation planning guidelines prepared by the USFWS, the Amendment does the following:

- Identifies impacts likely to result from the proposed taking of QCB within the relevant permit areas;
- Identifies measures the applicant/permittee will undertake to monitor, minimize and mitigate such impacts; the funding that will be made available to undertake such measures; and the procedures to address unforeseen circumstances; and
- Discusses alternative actions the County considered.

After a public comment period, the USFWS must issue the permit if the following issuance criteria are met:

- The taking would be incidental to otherwise lawful activities;
- The applicant would, to the maximum extent practicable, minimize and mitigate the impacts of the taking;
- The applicant would ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances would be provided;
- The taking would not appreciably reduce the likelihood of the survival and recovery of the species in the wild;
- The applicant would ensure that other measures (if any) that USFWS may require as being necessary or appropriate would be met; and
- USFWS is assured that the conservation plan would be implemented.

In 1999-2000, an Addendum to the HCP Handbook was adopted. The Final Addendum, which appeared in the June 1, 2000 Federal Register, outlines five points which must be included in HCPs: (1) biological goals and objectives of the plan; (2) Adaptive Management Plan; (3) Monitoring Program; (4) language regarding the intended duration of the take permit; and (5) public participation requirements. Guidelines for each of the five points are included in the final Addendum to the HCP Handbook, and each is addressed as appropriate in this Amendment.

Because the QCB is not state-listed, the requirements of the state ESA are not applicable to this

Amendment.

1.3 OVERVIEW OF THE AMENDMENT PROCESS

This amendment works through the existing MSCP framework to extend the benefits of the MSCP to apply to the QCB. It is applicable to the County of San Diego MSCP Subarea Plan; it does not apply to portions of the County outside of the MSCP, nor to lands within the MSCP under the jurisdiction of other agencies. The MSCP Subregional Plan (City of San Diego 1998), County of San Diego Subarea Plan (1997), and County of San Diego Biological Mitigation Ordinance (BMO) are hereby incorporated by reference.

Section 3.4 of the MSCP Subregional Plan describes the process for addition of species to the Covered Species List. If it is determined that the MSCP conservation measures will not adequately protect the species, the wildlife agencies are to work with the participants to identify and implement the steps necessary for coverage. The actions identified as potentially necessary to add a species to the Covered Species List include the management practices, enhancement measures and/or additional habitat acquisition.

In accordance with the specified procedures, the County and several large landowners in the Subarea have worked with the USFWS to develop the conservation measures described in this Amendment. These measures include conservation of additional QCB habitat as well as management, monitoring and impact minimization measures.

The County and USFWS made regular reports of the status of the planning effort to the Quino Stakeholders Group (see Appendix A for a list of participants). **DESCRIBE ANY OTHER PUBLIC INVOLVEMENT, ASSOCIATED DOCUMENTS (CEQA/NEPA) AS THE PROCESS PROCEEDS**

1.4 CONSISTENCY OF THE QCB AMENDMENT WITH THE SAN DIEGO MSCP SUBAREA PLAN AND THE SUBREGIONAL MSCP

This Amendment proposes a number of changes to the existing Subarea Plan to improve the conservation of the QCB. These changes are described primarily in Sections 5, 7 and 8 of this Amendment, and summarized as follows:

1. Incorporation of requirements to minimize and mitigate QCB impacts into the development review process for projects outside of hardline areas;

2. Revision of MSCP designation boundaries to protect additional populations/habitat of QCB on Otay Ranch Villages 13, 14 and 15;

3. Incorporation of QCB avoidance and minimization measures into the review requirements for specified uses in the preserve; and

4. Provision of guidelines for adaptive management and monitoring of QCB populations and habitat.

To implement these revisions, the County is proposing amendments to its BMO and IA, and providing assurances that the proposed management tasks will be adequately funded. Consistent with the MSCP Subregional Plan and County Subarea Plan, the changes described above would meet the standards for take authorization of the species, while retaining appropriate assurances for the County and landowners.

2.0 DESCRIPTION OF THE AMENDMENT AREA

2.1 SUBREGIONAL SETTING

This Amendment to provide take authorization for the QCB applies to the entire County MSCP Subarea Plan study area. The Subarea Plan implements the MSCP within some of the unincorporated areas under the County's jurisdiction (Figure 2-1). The County Subarea represents almost half of the MSCP study area, primarily covering its eastern portion. Community and Subregional Plan areas located within the MSCP study area and the unincorporated area of the County include Jamul, Lakeside, the western portion of Central Mountain, Otay, Crest, Dehesa, Harbison Canyon, Granite Hills, Valle de Oro, Spring Valley, Sweetwater, Ramona, Alpine, the eastern portion of North County Metropolitan and San Dieguito.

Because the cities and towns are so much more developed than the unincorporated areas in the County, undeveloped areas are disproportionately found in the County Subarea. Approximately 71 percent (approximately 173,000 acres) of the County Subarea provides habitat for native plants and wildlife, while the remaining 29 percent (approximately 69,000 acres) is disturbed, developed or agricultural land that is considered to have little to no habitat value. In addition, the County Subarea connects the remaining habitat in the western part of the MSCP area to the large federal land holdings outside of the MSCP to the east.

2.2 SUBAREA PLANNING AREAS

As described in Sections 2.2.1 through 2.2.3 below, the County's Subarea Plan is divided into three segments: Lake Hodges, South County and Metropolitan-Lakeside-Jamul (MLJ). These segments are generally described below in the order they are presented in the Subarea Plan; additional detail is provided in that document. In addition, several public and quasi-public conservation efforts described in Section 2.2.4 overlap the territory of the Subarea Plan but are separate from the County's efforts.

For the purposes of this Amendment, the Subarea has been further subdivided into five Quino Management Units (QMUs) based on geographic and/or jurisdictional boundaries, logical habitat units, the likelihood of QCB presence and the state of knowledge of the area. The Lake Hodges QMU consists of the lands within the Lake Hodges Segment, plus those immediately abutting lands within the MLJ, west of Interstate 15. The South County QMU is coterminous with the South County Segment. The MLJ Segment has been broken into three QMUs: San Pasqual, San Vicente and MLJ South.

2.2.1 Lake Hodges Segment

The Lake Hodges Segment is described in detail in Section 2 of the Subarea Plan, with relevant setting information summarized below.

The Lake Hodges QMU is located in west-central San Diego County, west of Interstate 15, north of the City of San Diego, and east of Rancho Santa Fe (Figure 2-2). It covers approximately

10,200 acres. Four major projects are located in this segment: Rancho Cielo, 4S Ranch, Santa Fe Valley and the Madura Subdivision. Each of these projects is currently under development.

The area is traversed by the Del Dios Highway, and crisscrossed by dirt roads. Various utility lines, including electrical and water, currently cross portions of the LHS. The San Dieguito River runs through the central portion of the QMU, generally paralleling the Del Dios Highway. Lake Hodges extends partially into the northeast boundary of the QMU.

The Lake Hodges Segment preserve is largely hard-lined (meaning the preserve and development boundaries have been precisely defined and agreed upon), with open space areas set aside in conjunction with each of the four major projects identified above, along with publicly owned lands and a mitigation bank created by The Environmental Trust (TET).

2.2.2 South County Segment

The South County QMU includes approximately 56,780 acres within the County jurisdiction in the southwestern portion of the County (Figure 2-3). The South County Segment is addressed in detail in Section 3 of the Subarea Plan, with relevant setting information summarized below.

The segment generally includes lands south of Jamacha Boulevard and South Bay Parkway, including portions of the Sweetwater, Otay and Tijuana River drainage basins. On the southwest, the segment includes the westernmost parcel of Otay Ranch south of Telegraph Canyon Road and extends south to the International Border south and east of Otay Lakes. To the northeast, the segment covers State, County and other parcels on McGinty Mountain. On the east, the segment covers substantial areas south of Campo Road (State Route 94), excluding the rural communities of Jamul and Dulzura. In the extreme southeast, the segment includes Bureau of Land Management (BLM) and California Department of Forestry (CDF) lands in the San Ysidro Mountains (Otay Mountain), and the lower western slopes of Tecate Mountain; it also includes BLM parcels southeast of Dulzura and north of State Route 94. The segment also includes two outlying areas on McGinty Mountain to the north and BLM lands north of Highway 94 and east of Dulzura (Engineer Springs, White Mountain).

The South County QMU includes public lands with natural open space lands pledged for conservation purposes by the BLM, USFWS, CDF and CDFG. It also includes lands owned by non-governmental entities, such as The Nature Conservancy lands on McGinty Mountain, and private mitigation banks including those managed by TET on McGinty Mountain, O'Neal Canyon and Marron Valley. These are described in detail in Section 3.3 of the Subarea Plan.

Major developments proposed in the South County QMU include Otay Ranch (multiple villages) and the East Otay Mesa Specific Plan Area. The landowners within Otay Ranch have agreed to set aside substantial open space areas as part of the development approval process for these projects. Much of the preserve in this segment is, therefore, hardlined. Portions of the QMU are subject to the major or minor amendment process in order to receive take authorization.

Since the Subarea Plan was approved, the ownership of Otay Ranch has been fragmented. Also, a number of parcels not included in the hard-lined preserve or Pre-approved Mitigation Area

designated under the Subarea Plan, including Daley Ranch, Hollenbeck Canyon and portions of the San Diego National Wildlife Refuge, have been acquired for conservation purposes (see Figure 5-2 and Sections 5.2 and 6.3 of this Amendment). Another major change that has occurred since Subarea Plan approval is the annexation of approximately 9,904 acres of land northwest of Otay Lakes Reservoir by the City of Chula Vista. As a result, the County no longer has land use authority in these areas and is no longer responsible for the acquisition of 2,889 acres of hardline preserve area.

2.2.3 Metro-Lakeside-Jamul Segment

The MLJ Segment of the County Subarea Plan includes lands that are under the jurisdiction of San Diego County and within the MSCP planning area, but outside of the Lake Hodges and South County Segments described above. This segment is described in detail in Section 4 of the Subarea Plan, with the relevant setting information summarized below.

The MLJ Segment encompasses approximately 172,950 acres. Population centers within this segment include the unincorporated communities of Jamul, Jamacha, Rancho San Diego, Lakeside, Moreno, Eucalyptus Hills, Lakeview, Johnstown, Flinn Springs, Spring Valley, Mount Helix, Crest and Winter Gardens. For the purposes of this Amendment, the MLJ Segment has been further subdivided into three QMUs: approximately 8,892 acres within the San Pasqual QMU, 42,112 acres within the San Vicente QMU and 66,593 acres within the MLJ South QMU (Figure 2-4). The San Pasqual QMU is located in the area surrounding the San Pasqual Valley. The San Vicente QMU consists of the lands generally south of Dye Road and north of Interstate 8. Finally, the MLJ South QMU consists of the portion of the MLJ south of Interstate 8.

Rather than being hard-lined, lands in this segment provide future opportunities for both development and conservation. The Wildlife Agencies have identified some lands as Pre-approved Mitigation Areas (PMA). The PMA includes both critical biological resource areas (areas with high and very high habitat value on the County's Habitat Evaluation Map) and linkages between them. Specific proposals for development and conservation are evaluated by the County for their consistency with the conservation goals for the segment through application of the BMO (see Sections 5.1.3 and 5.1.4 of this Amendment for additional detail regarding applicable requirements).

2.2.4 Relationship to Other Agencies

U.S. Fish and Wildlife Service

The USFWS currently controls approximately 2,800 acres in the Otay-Sweetwater Unit and Vernal Pool Stewardship Area of the San Diego National Wildlife Refuge (SDNWR), within the South County and MLJ South QMUs. These lands are managed for the benefit of listed and MSCP-covered species, in accordance with the commitment to partner with the participating local jurisdictions and the private sector in the creation and management of the MSCP preserve.

Bureau of Land Management

As noted above, the BLM owns lands in the South County QMU. As federal lands, these areas are not subject to the requirements of the County's Subarea Plan. They were, however, pledged under the MSCP to be included as part of the regional preserve system.

California Department of Fish and Game

Lands within the County Subarea owned by CDFG include the McGinty Mountain, Sequan Peak, Sweetwater River (Sloane Ranch) and Sycamore Valley (Goodan Ranch) ecological

reserves. As described above for the National Wildlife Refuge lands, these ecological reserves are managed in accordance with the commitment to partner with the participating local jurisdictions and the private sector in the creation and management of the MSCP preserve.

California Department of Forestry

As noted above, the CDF owns lands in the South County QMU. As state lands, these areas are not subject to the requirements of the County's Subarea Plan.

City of San Diego

In the Lake Hodges QMU, the City of San Diego owns a peninsula of land within Lake Hodges and north of the lake. This area is included in the Lake Hodges Segment, but is not counted as part of the County's total number of preserved acres, nor is it subject to the requirements of the County's Subarea Plan. Other City-owned lands include the area around Otay Lakes and in the Marron Valley in the South County QMU, and around San Vicente Reservoir in the San Vicente QMU. These lands are managed in accordance with the City's MSCP Subarea Plan.

Water Districts

Lands owned by the Sweetwater Authority, Otay Water District and Helix Water District are not part of the County Subarea Plan. Sweetwater Authority lands consist primarily of lands surrounding the Sweetwater Reservoir. The primary landholding of the Otay Water District is located just north of the City of Chula Vista boundary, approximately midway between Sweetwater Reservoir and Upper Otay Reservoir in the South County QMU. The primary landholding of Helix Water District is Lake Jennings, in the San Vicente QMU. These areas are not subject to the requirements of the County's Subarea Plan.

San Diego Gas & Electric

San Diego Gas & Electric (SDG&E) has facilities throughout the study area. SDG&E has its own approved HCP/NCCP, and is currently seeking an amendment to receive coverage for QCB. Its facilities are not subject to the provisions of the County's Subarea Plan.

2.3 DESCRIPTION OF PHYSICAL SETTING

Most of the land within the County's Subarea is rural, characterized by low-density residential and agricultural uses. Rural development standards typically apply to these communities. A few of these areas, however, such as Spring Valley, Lakeside and Valle de Oro, are predominantly developed. More detailed land use information is provided in Section 2.6, below.

The Subarea is a topographically diverse region that supports a variety of soil types and climatic gradients, from just above sea level to approximately 3,000 feet above mean sea level (AMSL). These topographic gradients repeat themselves in numerous locations throughout the Subarea, with each segment including river valleys and significant peaks. Topography, soils and climate combine to influence vegetation associations, which in turn support the characteristic rich

assemblage of plant and animal species present in the study area. Additional information about the vegetation communities that occur in the Subarea is provided in Section 2.4, below.

Notable features in the Lake Hodges QMU include Lake Hodges, the San Dieguito River and San Dieguito Reservoir. Elevations range from near sea level in the San Dieguito River Valley to nearly 1,300 feet AMSL in Rancho Cielo. Similarly, elevations in the South County QMU range from approximately 90 feet AMSL in the Sweetwater Valley to 2,700 feet on Otay Mountain. Other key features in the South County QMU include the Jamul Mountains, San Miguel Mountain, Proctor Valley, Marron Valley, O'Neal Canyon, Johnson Canyon, Dulzura Creek and Otay River. Finally, notable features in the MLJ include the San Diego River, Sweetwater River, Lake Jennings, southern tip of El Capitan Reservoir, San Vicente Reservoir and Hollenbeck Canyon. Elevations range from approximately 400 feet AMSL in the San Diego and Sweetwater River valleys to approximately 3,000 feet west of El Capitan Reservoir.

2.4 OVERVIEW OF BIOLOGICAL RESOURCES

2.4.1 Vegetation Mapping Methods

The baseline vegetation mapping used for this Amendment is the mapping conducted for the MSCP. The Working Draft MSCP (City of San Diego 1993) describes the vegetation mapping methodology. Color infrared aerial photography or high altitude transparencies were obtained for the entire study area. Vegetation boundaries initially were delineated on the photographs, based on aerial photograph interpretation and existing maps, EIRs and other reports, and discussions with local authorities. Each of the maps was then verified using vehicle and binocular surveys from vantage points and, to a limited extent, on foot. Subsequent to field verification efforts, helicopter overflights were used to check all areas that were inaccessible or could not be viewed during the vehicle surveys. Finally, the maps were distributed for public review in spring 1992 and again in spring 1993 to update the database and to correct inaccuracies in the mapping. The information regarding extent of development in the Subarea is modified as individual projects are approved; vegetation type data, however, has not been updated since the original MSCP data was gathered. It should be noted that assumptions about the QCB habitat value of certain areas (e.g., areas mapped as disturbed recovering to non-native grassland) were made for the purposes of this Amendment; these, along with other components of the methodology used to assess QCB habitat suitability, are described in Section 3.2 of this document. Where more recent vegetation information was available, it also was used to assess the vegetation impacts associated with the proposed MSCP designation amendments.

2.4.2 Vegetation Communities

Table 2-1 lists the habitat types and acreage within the County Subarea by QMU. As indicated in the table, coastal sage scrub and chaparral are the dominant vegetation types overall in the Subarea, comprising 33 percent and 28 percent of the total area, respectively. Grasslands represent a distant third in terms of abundance, comprising approximately three percent of the total area.

Table 2-1
GENERALIZED VEGETATION TYPES BY QMU (acre[s])

GENERALIZED HABITAT TYPES	QMU					TOTAL SUBAREA
	Lake Hodges	San Pasqual	San Vicente	MLJ South	South County	
Chaparral	2,775	3,853	24,126	27,289	21,717	79,761
Southern maritime chaparral	53	0	0	0	0	53
Coastal sage scrub	3,962	3,026	11,453	25,174	25,367	68,982
Coastal sage-Chaparral scrub	58	226	595	2,213	166	3,259
Maritime succulent scrub	0	0	0	0	16	16
Grassland	1,265	613	1,441	3,041	2,056	8,416
Cypress forest	0	0	0	73	5,652	5,725
Oak/riparian woodland	269	925	3,312	5,253	866	10,625
Other wetland	187	11	169	303	268	938
Eucalyptus woodland	741	1	23	66	11	842
Other habitat	861	237	987	3,102	617	5,804
TOTAL HABITAT ACRES	**10,202**	**8,892**	**42,112**	**66,593**	**56,780**	**184,578**
Urban/agriculture/developed	4,382	2,968	15,229	31,857	3,360	57,797
TOTAL	**14,585**	**11,860**	**57,341**	**98,450**	**60,140**	**242,375**

2.5 CRITICAL HABITAT DESIGNATION

The USFWS issued proposed critical habitat areas for the QCB in February 2001 (66 FR 9475). Critical habitat is defined in Section 3 of the Endangered Species Act (Act) as (i) the specific areas within the geographic area occupied by a species at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside of the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas that provide essential life cycle needs of the species. The proposed critical habitat designation (PCHD) has been configured to provide for dispersal corridors, as well as allow room for population expansion. As described in the Federal Register notice, these areas "are designed to provide sufficient habitat to maintain self-sustaining populations of Quino checkerspot butterflies throughout its range."

Subsequent to publishing the PCHD, the USFWS issued an associated Draft Economic Analysis. Both documents were subject to public review and comment. The USFWS is currently completing revisions to the PCHD in response to those comments, and has provided the preliminary map revisions to the County.

The County of San Diego MSCP Subarea contains Unit 3, the Otay Unit, of the PCHD (Figure 2-5). This unit (in its current draft form) encompasses approximately 51,208 acres in the southern part of the study area, including approximately 43,345 acres in the South County QMU and 7,864 acres in the MLJ South QMU. The Lake Hodges, San Pasqual and San Vicente QMUs are entirely outside of the PCHD. Lands considered to be "occupied" extend south from the SDNWR complex and State Route 94 to the international border with Mexico, west along the Otay River Valley to the northern rim of Otay Mesa, and east to the town of Tecate. Other lands included in the PCHD are located south of the Sweetwater Reservoir, and adjacent to State Route 94 east of San Miguel Mountain, Proctor Valley and Otay Lake. The PCHD Otay Unit is similar to the Southwest San Diego Recovery Unit designated in the Draft Recovery Plan, and contains six habitat complexes identified as essential by the Draft Recovery Plan. Additional information about QCB locations in the Subarea is provided in Section 3.3 of this Amendment.

The PCHD provides that if an HCP addressing the QCB is approved, the USFWS will reassess the critical habitat boundaries in light of the HCP. Although the USFWS has agreed to undertake this review when the HCP is approved, it is acknowledged that funding constraints may influence the timing of the review. Upon approval of this Amendment, the County will formally request that the PCHD within the Subarea be re-evaluated.

In approving this Amendment, the USFWS intends to issue a Biological Opinion that will, among other things, make findings addressing the QCB critical habitat designation. Specifically, the USFWS will include in the Biological Opinion for this Amendment findings of whether the activities permitted under the Section 10(a)(1)(B) permit will result in the destruction or adverse modification of the critical habitat, as defined at 50 CFR Section 402.02. This Amendment (1) provides for development in nonessential areas for QCB; (2) establishes preserve linkages; (3) employs long-term conservation and restoration strategies with special management considerations for the protection of QCB; and (4) employs measures to minimize impacts to the species. Because of these factors, it is anticipated that no additional special management considerations or protection will be necessary for the QCB as a result of either the implementation of this Amendment or any future federally permitted activity within the areas designated as critical habitat for the species.

2.6 LAND USE

Table 2-2 summarizes the generalized existing land uses within the Subarea, by QMU, based on the latest available (2001) coverage from the San Diego Association of Governments (SANDAG).

Table 2-2 GENERALIZED LAND USE TYPES BY QMU (acre[s])					
GENERALIZED LAND USE DESCRIPTION	QMU				
	Lake Hodges	San Pasqual	San Vicente	MLJ South	South County
Agriculture	2,147	2,075	2,256	3,371	1,951
Developed/Disturbed	4,315	1,640	15,763	33,566	2,115
Open Space	8,131	8,144	39,321	61,512	56,073

As shown in the above table and on Figure 2-6, the primary land uses in the County are open space (including both reserves/preserves and land that is currently vacant and undeveloped), agriculture and residential use. The prevalence of these land uses varies among the QMUs. Open space makes up more than half of the land area in each of the QMUs, ranging from 56 percent of the Lake Hodges QMU to 93 percent of the South County QMU. Agricultural use ranges from approximately three percent of the South County and MLJ South QMUs to 18 percent of the San Pasqual QMU. Finally, the amount of disturbed and developed areas ranges from less than 4 percent of the South County QMU to approximately 34 percent of the MLJ South QMU.

2.7 LAND OWNERSHIP

A review of the land ownership information indicates that state, federal and local governments, along with private conservation organizations, own a substantial amount of land in the Subarea. In fact, a governmental entity is the largest landowner in three of the five QMUs.

The major ownerships in the Lake Hodges QMU are associated with 4S Ranch (approximately 2,605 acres) and Rancho Cielo (approximately 1,410 acres), together representing approximately 28 percent of the QMU. Other large landowners in the Lake Hodges QMU include the County of San Diego (approximately 640 acres) and The Environmental Trust (approximately 325 acres).

The largest landowner in the San Pasqual QMU is the State of California, with 1,235 acres. Other public ownerships include the City of San Diego (626 acres) and County of San Diego (270 acres). The other major landowners in this QMU are private (including Rodney Company NV, 1,132 acres; Rockwood Canyon Venture Management, 766 acres).

The largest landowner in the San Vicente QMU is Monte Vista Oaks, LLC, with approximately 4,280 acres (36 percent of the QMU); Hanson Aggregates and Morgan Fine Arts, Inc. each also own over 1,000 acres. Public/conservation organization ownerships in the QMU include the County of San Diego (3,424 acres), federal government (2,359 acres), State of California (1,462 acres) and San Diego Audubon Society (599 acres).

The largest landowner in the MLJ South QMU is the State of California (11,313 acres). The federal government owns approximately 4,769 acres and the County owns approximately 836 acres. Major private landowners in this QMU include 2022 Ranch, LLC (2,047 acres), Sloan

Canyon Sand Company (1,218 acres) and Sadhana Temple of New York, Inc. (1,115 acres).

The major landowner in the South County QMU is the federal government, with approximately 27,552 acres (49 percent of the QMU). In addition, the State of California owns 3,388 acres and the County owns 1,348 acres. The largest private landowners in the QMU include Otay Land Company, LLC (3,379 acres), United Enterprises Ltd. (3,333 acres) and Otay Project, LP (3,089 acres).

3.0 QUINO CHECKERSPOT BUTTERFLY BASELINE BIOLOGICAL DATA

3.1 DESCRIPTION OF THE SPECIES OF CONCERN

This section presents general background information regarding the QCB. This information is largely based on the Draft Recovery Plan, which compiled the best available information about the species at the time of its preparation. The information in the Recovery Plan has been augmented with additional sources and updated information where appropriate. For more detailed information, the reader is referred to Appendix B of this document and to the Recovery Plan (USFWS 2000).

3.1.1 Status

The QCB was federally listed as endangered on January 16, 1997 (62 FR 2313). Its status is based on the following: it was at such low densities prior to listing that it was thought to possibly be extinct (62 FR 2315), populations have been reduced in number and size by more than 95 percent range-wide, it is known to undergo large population fluctuations related to weather (Murphy and White 1984), and most current populations are threatened by ongoing development and invasion of non-native plant species (USFWS 2000).

3.1.2 Distribution and Habitat Considerations

The QCB was formerly widespread in the coastal plains and inland valleys of southern California, including Los Angeles, Orange, Riverside, San Diego and San Bernardino counties, and northern Baja California, Mexico (Mattoni et al. 1997, USFWS database). As recently as the 1950s, collectors described the QCB as occurring on every coastal bluff, inland mesa top, and lower mountain slope in San Diego County and coastal northern Baja California (USFWS 2000).

Throughout most of southern California, the native habitats of this butterfly have disappeared incrementally as development has progressed and undeveloped areas have been invaded by non-native plant species. More than 75 percent of the QCB's historic range has been lost (Brown 1991, USFWS database), including more than 90 percent of the coastal mesa and bluff distribution. Current information suggests that the butterfly has been extirpated from Los Angeles, Orange and San Bernardino counties (USFWS 2000).

QCB show a preference for relatively open areas that may include features such as cryptogamic crust with few vascular plants, surrounded by low-growing vegetation (Osborne and Redak 2000). Appropriate generalized habitat types include early and middle successional grasslands, open scrub communities, broken chaparral, and vernal pools (Murphy 1990). Specific habitat patch suitability is determined primarily by larval host plant density, topographic (and associated microclimate) diversity, nectar resource availability and climatic conditions (Singer 1972, Murphy 1982, Weiss et al. 1988, Murphy et al. 1990). There is some indication that male QCB, and to a lesser extent females, may use hilltops and ridgelines, even in the absence of larval host plants (USFWS 2000).

3.1.3 Life History

The species generally has one generation per year. The species normally requires a year or more to complete its life cycle (egg to adult), with larvae spending much of the time in diapause (a state of dormancy; Ballmer et al. 1998).

Pre-Diapause Larval Stage

Normally, pre-diapause larvae consume the plant on which they hatch, and then migrate in search of new plants. Due to the limited ability of larvae to move among host plants, high local host density is necessary for larval survival (Osborne and Redak 2000). Areas with host plant populations that do not remain edible for sufficient time after eggs are laid cannot provide suitable habitat that season. If larvae have accumulated sufficient reserves by the time their host plants become inedible, they are able to enter diapause (USFWS 2000).

Diapause

Diapause is a low-metabolic resting state that enables larvae to survive for months during the summer without feeding. While in diapause, larvae are much less sensitive to climatic extremes. Larvae are able to re-enter diapause several times before maturing, which may extend their life cycle for several years (Singer and Ehrlich 1979). Because QCB larvae can re-enter diapause, it is possible that an adult flight period may only include a portion of the original larval population or may not occur at all in some occupied sites under adverse conditions. From the perspective of judging whether a population has been extirpated, it is important to know that a robust population may generate no adults at all under poor environmental conditions (USFWS 2000).

Post-Diapause Larval Stage

Sufficient rainfall, usually during November or December, causes larvae to break diapause. Rain stimulates germination and growth of the host plants fed upon by postdiapause larvae, which can crawl up to several yards in search of food. The time between diapause termination and pupation can range from two weeks if conditions are warm and sunny, to two to three months if cold, rainy conditions prevail (USFWS 2000). Adults emerge from pupae after approximately 10 days, again depending on weather (Mattoni et al. 1997).

Adult Stage

Adults are active during a four-to-six week flight period beginning between late February and May, depending on weather conditions (Emmel and Emmel 1973). An unusual set of climatic events or rainfall from a Mexican tropical storm can sometimes stimulate adult emergence in the fall (Mattoni et al. 1997). Adults live from 10 to 14 days; however, adult emergence from pupae is staggered, resulting in the longer overall flight season.

QCB use air temperatures and sunshine to increase their body temperature to the level required for flight. QCB generally fly close to the ground in a relatively slow, meandering flight pattern, and tend to avoid flying over trees, buildings, or other objects taller than six to eight feet. Their

thermodynamic requirements and natural avoidance of shaded areas deters flight in densely wooded areas and other types of closed-canopy vegetation (USFWS 2000).

Most *Euphydryas editha* subspecies exhibit generally sedentary behavior, with adults frequently remaining in the same habitat patch in which they developed as larvae (Ehrlich 1961, 1965; Boughton 1999, 2000). Data from mark-recapture studies indicate that long-distance dispersal (greater than 0.6 mile) in *Euphydryas editha* is rare (USFWS 2000). Murphy and White (1984) suggested, however, that long-distance dispersal events associated with population outbreaks may contribute significantly to colonization or recolonization of unoccupied areas, and hence to long-term survival of the QCB.

3.1.4 Metapopulation Dynamics

Murphy (1990) suggested that the human-induced decline in the distribution and abundance of the QCB is exacerbated by the complex "metapopulation dynamics" which affect the persistence of this butterfly. In metapopulation dynamics, butterflies exist in an assemblage of individual demographic units or populations that periodically exchange individuals. Metapopulation dynamics occur when (1) patches of habitat support local breeding populations; (2) no single population is large enough to ensure long-term survival; and (3) habitat patches are not too isolated to preclude simultaneous extinction of all populations. A metapopulation is a "population of populations" which is dependent on a persistent "reservoir population" to provide colonists to habitats supporting "satellite populations" which would frequently go extinct due to natural environmental causes such as drought or fire (D. Murphy, pers. comm.).

Metapopulation stability requires a minimum number of habitat patches connected by dispersal corridors (landscape connectivity) (USFWS 2000). Reserves should be designed to provide sufficient numbers of habitat patches such that (1) only a small number of habitat patches will likely be extirpated in a single year and (2) patches are close enough so that natural recolonization can occur at a rate sufficient to maintain a relatively constant number of patches occupied by larvae. Environmental diversity among habitat patches should reduce the probability of simultaneous extirpation of habitat patches (Harrison and Quinn 1989). There is a need to focus conservation efforts on remaining habitat patches that exhibit the greatest current extent, topographic diversity, and resource availability (D. Murphy, pers. comm.).

Habitat linkage areas should connect as many habitat patches as possible to optimize metapopulation dynamics (Thomas 1994). Habitat patches with fewer and/or longer distance linkages to other patches have lower probability of natural recolonization following local extirpation events. Linkages greater than 0.6 mile are not likely to be used by dispersing *Euphydryas editha* adults (Harrison and Quinn 1989). Linkage areas must be free of dispersal barriers (artificial structures, dense stands of trees or tall shrubs) and mortality sinks (e.g., high-traffic roads). Habitat networks should also be buffered (i.e., embedded in natural areas as large as possible) to reduce indirect impacts of development and the need for future or ongoing restoration in occupied habitat.

3.1.5 Reasons for Decline and Current Threats

QCB populations have been reduced in number and size by more than 95 percent range-wide primarily due to direct and indirect human impacts including habitat loss and fragmentation, invasion of non-native plant species, and disrupted fire regimes. Disturbances that have compromised QCB metapopulation integrity include conversion of habitat by development or invasion by non-native plant species, grazing, trampling, fragmentation of habitat, and reduction or constriction of the landscape connectivity that facilitates habitat recolonization. High-traffic roads are obstacles of particular concern. Undeveloped lands infused with or completely surrounded by development experience direct and indirect human disturbance including trampling, off-road vehicle use, dumping, pollution, and enhanced non-native species invasion, all of which are impacts that reduce population stability (USFWS 2000).

Conversion from native vegetation to non-native annual grassland will be the greatest threat to QCB reserves based on observations of the large-scale invasions throughout the range (Freudenberger et al. 1987, Minnich and Dezzani 1998, Stylinski and Allen 1999). The increased dominance of non-native species is reducing the abundance of QCB foodplants (Dodero pers. comm.), and habitat fragmentation exacerbates vegetation type conversion. Corridors of human activity through unfragmented natural areas such as unpaved roads, trails and pipelines are also conduits of non-native seed dispersal (Zink et al. 1995). Other causes of vegetation type conversion include fire, grazing, off-road vehicle activity, and increased nitrogen deposition (Allen et al. 2000).

3.2 QCB SURVEY METHODS

Information regarding surveys conducted throughout the plan area was obtained from the USFWS. As illustrated on Figure 3-1, protocol surveys have been conducted over approximately 18,021 acres (7 percent) of the plan area between 1999 and 2001 (2002 was an extremely poor flight year due to drought conditions and did not produce any meaningful data), with the extent and timing of surveys varying by QMU (Table 3-1).

Table 3-1
QCB PROTOCOL SURVEY COVERAGE BY QMU (acres)

QMU	1999	2000	2001	Total Area Surveyed	Percent of QMU Surveyed*
Lake Hodges	4,248.7	159.2	NS	4,478.2	31
San Pasqual	223.0	213.9	NS	436.9	4
San Vicente	2,147.2	1,873.5	704.9	5,020.7	9
South Metro-Lakeside-Jamul	649.0	828.0	436.6	1,913.6	2
South County	1,635.8	2,517.5	1,596.3	6,171.8	10

TOTAL	**8,903.7**	**5,592.1**	**2,737.7**	**18,021.1**	**7**

Note: 1999-2001 columns may not add to total area surveyed because some areas were surveyed in multiple years (i.e., if the same area was surveyed in 1999 and 2000, it was included in the column for each year but not double-counted in the total).
* Represents percentage of entire plan area, much of which is not suitable QCB habitat.

As illustrated on the above table, approximately 31 percent of the Lake Hodges QMU has undergone protocol surveys for QCB; most of these surveys occurred in 1999. Survey coverage in the other QMUs ranges from 2 percent in the MLJ South to 10 percent in South County (most of which was in the western portion of the QMU).

It should be noted that, in addition to the protocol surveys shown on the map, a number of areas in the SCS were subject to one-time spot-checks in 2001. Potentially suitable QCB habitat was determined during a helicopter survey performed by Barry Jones and Greg Mason of HELIX Environmental Planning, Inc. and Dr. Dennis Murphy of the University of Nevada, Reno on March 1, 2001. Global Positioning System (GPS) points were taken over these habitat areas. Seventy-three points were identified that were considered potential QCB areas. These points were located primarily along ridgelines and hilltops with open habitat. Those points determined to be in current or proposed open space or on private property, with permission, and not already being surveyed, were further assessed on the ground for QCB suitability. These assessments were conducted by individuals that hold USFWS Threatened/ Endangered species permits and included one-time focused surveys for the QCB. Information related to the suitability of the habitat for the QCB was collected for each location (habitat type, presence of host/nectar plants, bare ground, etc.), and representative habitat photos were taken. Locations were visited only one time if the QCB was found, and more than once, if possible, if the QCB was not found. Every effort was made to do the surveys during the most favorable weather conditions for QCB, although temperatures were rather cool throughout the most of survey period, even when the QCB was found.

3.3 CURRENT STATUS OF THE SPECIES WITHIN THE SUBAREA

Historically, the QCB almost certainly occurred throughout the coastal plain and foothills of the study area, and may have occurred in highest densities around vernal pools. The vast majority of the recent QCB observations within San Diego County have occurred in unincorporated areas. While some areas (Oak Grove in the northern part of the County and Jacumba in the southeast) known to support QCB are not included in the MSCP Subarea, the Subarea does contain the majority of the known locations in the County.

Virtually all of the QCB observation locations within the plan area have been in the southern portion of the County. Within this area, QCB have been observed north, east and south of Otay Lakes, ringing Otay Mountain, near Hollenbeck Canyon, in Proctor Valley, on the San Diego National Wildlife Refuge northeast of Sweetwater Reservoir, along the mesa rim above the Otay River and at the Salt Creek confluence, and around the Marron Valley (Figure 3-2). The areas with the highest number of observations include near Hollenbeck Canyon, north and east of Otay Lakes and east Otay Mesa. The only recent QCB observation in the plan area but outside the

SCS is a 2001 observation northwest of San Vicente Reservoir.

For purposes of this amendment, the term population has been defined as an independent demographic unit that is separated by distance (generally greater than 0.6 mile), topography, vegetation (i.e., riparian habitat) or manmade barrier (i.e., roads). For example, the East Otay Mesa population consists of all of the known locations within the East Otay Mesa Specific Plan area, but does not include the single observation north of Otay Mountain Truck Trail. A total of 23 populations have been identified and are described in Table 3-2 and shown on Figure 3-2. The largest populations based on individual sightings are at Otay Ranch Village 13, the East Otay Mesa Specific Plan Area, Marron Valley, Daley Ranch, and Otay Ranch Village 16. An additional four populations are located within the City of Chula Vista Subarea Plan.

Table 3-2
KNOWN QCB POPULATIONS

LOCATION # ON FIGURE	LOCATION	DESCRIPTION
South County QMU		
1	East Otay Mesa	East Otay Mesa Specific Plan – multiple locations, multiple sightings
2	Southern Otay Mountain	Upper portions of southern slope of Otay Mountain – two locations
3	O'Neal Canyon	Upper reaches of O'Neal Canyon – single location
4	Village 15	Otay Ranch Village 15 – three locations, multiple sightings
5	Village 15 East	Otay Ranch Village 15 Eastern end – one location, multiple sightings
6	Village 13	Otay Ranch Village 13 – multiple locations, multiple sightings
7	Thousand Trails	Just south of Thousand Trails – single location, single sighting
8	Village 17	Village 17 – single location, multiple sightings
9	Village 14	Otay Ranch Village 14 – single location, multiple sightings
10	Village 16	Otay Ranch Village 16 – single location, multiple sightings
11	Hidden Valley	Hidden Valley Estates – single location, single sighting
12	Northwest Jamul	Northwest Jamul – single location, single sighting
13	Rancho San Diego	San Diego National Wildlife Refuge – multiple locations, multiple sightings

14	Las Montañas	San Diego National Wildlife Refuge – single location, single sighting
South Metro-Lakeside Jamul QMU		
15	Daley Ranch	Daley Ranch South of Hwy 94 – single location, multiple sightings
16	Sycamore Canyon	Sycamore Canyon – four locations, multiple sightings
17	Marron Valley North	Northern portion of Marron Valley – multiple sightings, multiple locations
18	Marron Valley South	Southern portion of Marron Valley – multiple sightings, multiple locations
19	Southeast Dulzura	Southeast of Dulzura – one location, multiple sightings
20	Daley Ranch South	Daley Ranch Southwestern Area – single location, multiple sightings
21	Daley Ranch Central	Daley Ranch Central – multiple locations, multiple sightings
22	Daley Ranch North	Daley Ranch North of Hwy 94 – multiple locations, multiple sightings

Table 3-2 (cont.)
KNOWN QCB POPULATIONS

LOCATION # ON FIGURE	LOCATION	DESCRIPTION
San Vicente QMU		
23	Boys and Girls Club	North of San Vicente Reservoir – single location, single sighting
City of Chula Vista		
24	Otay Mesa	Otay Mesa south of Otay River – multiple locations, single sightings
25	Otay River Valley	Otay River Valley – multiple locations, single sighting
26	Rolling Hills	Rolling Hills Ranch – multiple locations, single sighting
27	Inverted L	San Diego National Wildlife Refuge – single location, multiple sightings

The status of the QCB in each of the QMUs is summarized in Table 3-3, below.

Table 3-3
QMU CHARACTERISTICS

CHARACTERISTIC	QMU				
	Lake Hodges	San Pasqual	San Vicente	MLJ South	South County
In recommended survey area?	No	No	Yes	Yes	Yes
Designated critical habitat (acres)	0	0	0	7,864	43,345
Number of Populations	0	0	1	8	13
Number of recent observations*	0	0	2	61	588
Protocol survey coverage 1999-2001 (acres)	4,478 (31%)	437 (4%)	5,021 (9%)	1,914 (2%)	6,172 (10%)

*Observation points between 1997 and 2001; may include multiple observations of a single butterfly.

Based on the above characteristics, the County and USFWS have worked together to assess the likelihood of QCB occurring and determine appropriate measures to address the species in each of the QMUs, as described in the following sections of this Amendment.

4.0 EXISTING HABITAT SUITABILITY

4.1 MODELING METHODOLOGY

The study area contains a vast amount (approximately 173,000 acres) of undeveloped land. An analysis of the suitability of this land to support QCB was necessary for the following reasons:

- Survey results are not available for all areas, and some of the available surveys were not conducted in accordance with established protocol;
- The number (and presence) of adult QCB vary substantially from year to year depending on climatic and other conditions; and
- Patches of suitable habitat that are unoccupied in one season may be occupied in another season, due to the influences of metapopulation dynamics.

The County of San Diego and the USFWS have worked together to assess the potential of extant habitat within the Subarea to support QCB. The habitat assessment methodology was largely based on the methodology jointly developed by the Wildlife Agencies and the City of Chula Vista for its MSCP Subarea Plan. Adjustments were, however, made to the methodology to account for the differences between the two subareas. (For areas of overlap between the two plans, the results of Chula Vista's model were used.)

Analysis of anticipated impacts and conservation was based on a generalized "landscape-level" habitat assessment. Actual QCB habitat utilization under current conditions is typically limited to small patches, and depends heavily on habitat quality, particularly related to the extent of non-native plant invasion. As such, the total acreage of areas designated as "potential habitat" exceeds by orders of magnitude the areal extent of currently occupied habitat, or areas that are truly likely to support QCB in the future without significant habitat enhancement. This very generalized model was selected because of the limited knowledge available about QCB habitat utilization, and because mapping actual habitat suitability on the very small scale at which it occurs is prohibitive for such a large area. As described by Hanski (in press), "unless an exceptional amount of empirical data are available, and provided that the landscape structure is highly fragmented, it is preferable to use relatively simple models…with fewer unverified assumptions." It should be noted that any over-estimation of potential habitat typically would occur throughout the Subarea (i.e., over-estimation of suitable habitat in the preserve is likely roughly proportional to over-estimation of suitable habitat in development areas). Where available, detailed habitat assessment and survey information has informed the decision-making process.

A number of areas were immediately excluded from the habitat suitability analysis, based either on regulatory factors or habitat type considerations and are graphically depicted on Figure 4-1. For example, City of San Diego Cornerstone Lands that are located within the County's jurisdictional area, but over which it has no land use authority, were not considered in the analysis.

Only those areas that support habitat types generally considered capable of supporting QCB were carried forward in the suitability analysis. Habitat types considered to have the potential to support QCB are limited to the following:

- Coastal sage scrub
- Maritime succulent scrub
- Chaparral
- Coastal sage scrub/chaparral ecotone
- Grassland
- Vernal pool

Although dense-canopy chaparral is not generally considered to have the potential to support QCB, all habitats mapped as chaparral have been included as potentially suitable habitat because available mapping does not allow for consideration of vegetation density and features such as fire breaks/dirt roads that could provide for patches of suitable habitat. Many of the QCB observation locations have been in habitat generally mapped as chaparral, in locations where the habitat had been opened up by grazing, fire breaks and dirt roads.

The assessment of habitat suitability was generally based on the 1995 MSCP vegetation mapping. This was, however, updated by (1) removing areas for which development authorizations have been provided from consideration as potential habitat and (2) including lands that have been acquired for conservation and are no longer in agricultural use (i.e., are recovering their habitat values) as potential habitat.

Habitat types other than those listed above have been designated as "Unsuitable Habitat." They total approximately 83,396 acres, or approximately 34 percent of the Subarea.

The remaining areas have been assigned habitat suitability categories A through C, with A representing the highest relative suitability and C representing the lowest. This categorization was based on 2001 survey results and distance from known QCB locations (Figure 4-1). Because 2001 was considered a good flight season, it is considered relatively unlikely (though not impossible) that butterflies will occur in areas with negative protocol surveys in 2001. Proximity to known QCB locations was based on a 0.6-mile (1 kilometer) radius. This radius was selected because data from mark-recapture studies indicate that dispersal greater than this distance is rare in *Euphydryas editha* (USFWS 2000, page 20).

Category A includes all areas within 0.6 mile of a known QCB location.

Category B includes areas with no 2001 protocol survey, outside 0.6 mile of a known QCB location.

Category C includes areas with a negative 2001 protocol survey, outside 0.6 mile of a known QCB location. It also includes habitats that are extremely fragmented, isolated or otherwise considered unlikely to support QCB, based on expert opinions. Examples include the Alpine area and the Lake Hodges QMU.

4.2 EXISTING HABITAT SUITABILITY

Total acreage within the study area that was determined to have some suitability for QCB included approximately 23,935 acres (10 percent) in Category A, 117,365 acres (48 percent) in Category B and 16,533 acres (7 percent) in Category C (Table 4-1).

Table 4-1
MODELED HABITAT SUITABILITY BY QMU

MODEL CLASS	QMU					TOTAL ACRES
	Lake Hodges	San Pasqual	San Vicente	South Metro-Lakeside-Jamul	South County	
A	0	0	709	4,760	18,466	23,935
B	0	7,338	30,549	49,380	30,098	117,365
C	6,434	320	5,369	3,828	582	16,533
Total Suitable	6,434	7,658	36,627	57,968	49,146	157,833
Unsuitable	8,145	4,202	20,714	40,482	10,994	83,964

The fact that so much of the land falls into Category B is because much of the habitat in the Subarea is not in close proximity to a known QCB observation, but also has not been the subject of surveys for the species. Their categorization, therefore, reflects the current uncertainty about the potential of these areas to support QCB. Due to the locations of known recent QCB observations, the only areas included in Category A are northwest of San Vicente Reservoir and in the southern part of the County.

5.0 ALLOWED LAND USES FOR POTENTIAL DEVELOPMENT AREAS

The County's Subarea includes both lands hard-lined for inclusion in the preserve and lands that, under varying requirements, may be available for development. This section addresses the requirements for potential development areas; requirements for uses in the preserve area are addressed in Section 7 of this Amendment.

Lands not designated as part of the preserve are broken into a number of categories under the Subarea Plan. These include Take Authorized Area, Take Authorized Consistent with Metro/Lakeside/Jamul Segment Criteria, Golf Course Related Development Allowed in Open Space II Area, Sensitive Biological Habitat "D" Designator Area, Active Use Planning Area, Minor Amendment Area, Minor Amendment Area with Special Requirements and Major Amendment Area.

This Amendment does not relieve any project of compliance with the requirements of the Subarea Plan with regard to other biological resources that must be addressed prior to project approval (including required Minor or Major Amendments), unless otherwise specifically described. The following subsections summarize existing requirements relevant to conservation of the QCB, describe revisions/additions to those requirements proposed as part of this Amendment, and analyze the consistency of the revisions with the approved MSCP Subregional Plan and County Subarea Plan.

5.1 SUMMARY OF EXISTING REQUIREMENTS

5.1.1 General Requirements

Section 1.10 of the Subarea Plan specifies requirements with which land uses adjacent to the preserve must comply. Section IV.B.4 of the draft Framework Management Plan addresses adjacency management issues, such as the introduction of non-native plant species, for projects adjacent to the preserve.

5.1.2 Take Authorized Area

Take Authorized Areas have pre-approved authorization for impacts to currently covered species, subject to no additional requirements.

5.1.3 Criteria Area

Section 4.2.1 of the Subarea Plan contains the preserve design goals and criteria for cores and linkages for the Criteria Areas in the MLJ. These include the following goals and criteria of relevance to the QCB:

- Include measures to maximize the habitat structural diversity of conserved habitat areas, including conservation of unique habitats and habitat features (including host plants);

- Create significant blocks of habitat to reduce edge effects and maximize the ratio of surface

area to the perimeter of conserved habitats;

- Provide incentives for development in the least sensitive habitat areas;
- Minimize impacts to narrow endemic species and avoid impacts to core populations of narrow endemic species;
- Preserve the biological integrity of linkages between Biological Core Resource Areas; and
- Achieve the conservation goals for covered species and habitats.

Furthermore, Subarea Plan Section 4.2.4 provides that impacts to rare, narrow endemic animal species (specifically including QCB) and Biological Resource Core Areas be avoided to the maximum extent practicable. Where complete avoidance is infeasible, the Subarea Plan provides that projects shall be designed to avoid significant reduction in species viability. The County's adopted BMO defines the design criteria to implement this standard, summarized as follows:

- Project development shall be sited in areas that minimize impact to habitat;
- Clustering to the maximum extent permitted by the County regulations shall be considered;
- Projects shall be allowed to utilize design that may encroach into steep slopes; and
- The County shall consider reduction in road standards.

5.1.4 Pre-approved Mitigation Area

The Wildlife Agencies have pre-approved certain areas within the MLJ for use as mitigation lands, to aid in conservation efforts of sensitive resource areas. The BMO is designed to (1) provide incentives for development in areas with lower habitat value and (2) direct conservation and open space preservation to areas of high and very high habitat value. Impacts within the PMA are not prohibited; they are, however, to be avoided to the maximum extent practicable, as defined by the design criteria described above. Also, proposed projects within the PMA must meet different thresholds than those elsewhere to qualify for an exemption from the requirements of the BMO. Specifically, agriculture-related clearing is not exempt if it is located within the PMA, and single-family residential development on parcels 10 acres or less in size and zoned for single-family residential use are exempt from the ordinance only if they clear two acres or less, compared to five acres outside of the PMA. The County may request in writing that the Wildlife Agencies modify the boundaries of the PMA map to add and/or delete lands from the map. The Wildlife Agencies will determine if the modification is consistent with the goals and objectives of the MSCP and County Subarea Plan prior to authorizing the modification.

5.1.5 Minor Amendment Area

Minor Amendment Areas, as described by the Subarea Plan, "contain habitat that could be partially or completely eliminated (with appropriate mitigation) without significantly affecting

the overall goals of the County's Subarea Plan." Minor Amendment Areas must meet the criteria and achieve the goals of linkages and corridors described in the Subarea Plan and provide mitigation consistent with the BMO. These areas require approval of the Service's Field Office Supervisor and CDFG's NCCP Program Manager, as well as the County.

5.1.6 Minor Amendment Area Subject to Special Considerations

Minor Amendment Areas Subject to Special Considerations are limited to the East Otay Mesa Specific Plan Area. These are transitional areas located between the Major and Minor Amendment Areas. In order to receive approval, these areas must complete a Resource Conservation Plan addressing impacts to habitat and endangered species on the site. Certain areas may be acquired or exacted as open space as a potential means of mitigating environmental impacts of development.

5.1.7 Major Amendment Area

Similar to Minor Amendment Areas, take of covered species within Major Amendment Areas may be authorized only after completion of an amendment process. Requests for Major Amendments must be processed by the Wildlife Agencies in conformance to all applicable laws and regulations in effect at the time the request for an amendment is received (including completing NEPA/CEQA processing). This Amendment is intended to complete the required Major Amendment process for Otay Ranch Villages 13, 14 and 15.

5.2 PROPOSED PLAN REVISIONS

Existing hardline areas, as well as those properties processing major amendments as part of this Amendment, will receive take authorization for QCB subject to no additional requirements except the minimization requirements described below in Section 5.2.1. Other properties will receive QCB take authorization subject to the requirements described throughout this section, as applicable.

5.2.1 General Requirements

Survey Requirements

On properties where (1) reserve boundaries have been hardlined or (2) protocol surveys were conducted in 2001, no further surveys are required for reserve design purposes. The remaining properties may be subject to habitat assessment and/or protocol survey requirements. General Habitat Assessments are recommended for properties within both the USFWS 2002 Recommended Survey Area and the Eastern QCB Survey Limit Line (Figure 5-1). The Eastern QCB Survey Limit Line was developed for the County by local entomologist David Faulkner, based on his assessment of where the QCB has potential to occur. Additional information regarding the development of the line is included in Appendix C of this document.

General Habitat Assessments, intended to determine whether a Focused Habitat Assessment is recommended, can be conducted at any time of the year. Based on the General Habitat

Assessment, the following conditions will be considered to represent unsuitable habitat, which is not subject to Focused Habitat Assessment or protocol survey requirements:

- Closed canopy chaparral (not accessible except by bushwhacking, with little or no herbaceous understory)
- Closed canopy upland forest
- Closed canopy riparian forest
- Dense deergrass meadow
- Dense non-native grassland where few host plants are present (host plants are only identifiable during the spring)
- Open areas of 0.5 hectare or less that are surrounded by closed canopy chaparral or forest, that are at least 200 meters from the next nearest open area

If potentially suitable habitat is identified based on a General Habitat Assessment, or lands are within the boundaries identified above if such an assessment has not been conducted, a Focused Habitat Assessment is recommended. The Focused Habitat Assessment shall be conducted in accordance with the USFWS protocol current in the year of survey. If suitable habitat is identified, surveys for QCB will be required for processing of proposed development. If there are no known QCB within five miles (the maximum known dispersal distance of bay checkerspots [USFWS 2000]) of the site, only two surveys will be required during the flight season, with at least one in the middle of the flight season. Surveys will be conducted by permitted biologists in accordance with the weather requirements stated in the then-current protocol. If the site is within five miles of a known QCB location, surveys will be conducted in full accordance with the then-current protocol (including the number of required surveys).

The USFWS and County may agree to revise the required survey areas, without amendment to the Subarea Plan, if additional information about the distribution of the species becomes available. The results of all habitat assessments and surveys must be reported to both the USFWS and the County. The County and USFWS shall review and respond to all habitat assessment and protocol survey results within 30 days of receipt of reports. Surveys will be required only once for reserve design purposes on each property, unless it can be demonstrated that the survey was not conducted in accordance with the requirements of this document and the then-current USFWS survey protocols. If no response is received within 30 days of receipt, the reports shall be deemed to have been accepted.

Minimization Requirements

For areas adjacent to preserved Category A habitat (refer to Figure 4-1), a qualified biological monitor shall be on site during clearing, grubbing and/or grading activities to ensure that the approved limits of disturbance are not exceeded and that dust control measures are being implemented. Specifically, the monitor shall be on site at all times during clearing and grubbing operations where such operations occur within 100 feet of the edge of Category A habitat in the preserve. If high-visibility fencing that clearly demarcates the limits of disturbance is erected, the monitor will visit the site at least once a week during rough grading operations to ensure that the fencing is being maintained and remains in the appropriate location. If the limits of disturbance are simply staked or flagged, the monitor will check the site daily during rough

grading operations to ensure that the approved limits of disturbance are not exceeded. Upon completion of rough grading activities, monitoring will no longer be required.

As a means of offsetting impacts to potential QCB habitat from development allowed by the Subarea Plan, the County will require soil, seed and plant salvage on a project-by-project basis throughout the Subarea. Project review and CEQA analysis will identify appropriate salvage opportunities. Mitigation measures and conditions of project approval would specify the soils, seed and plant material to be salvaged, identify the procedures for salvage, and specify locations and time frames for use of material, as appropriate.

5.2.2 Lake Hodges QMU

Large amounts of potentially suitable habitat have been designated/set aside for preservation in this QMU. Because there are no recent QCB observations, and QCB occurrence in this QMU is considered unlikely, the existing reserve configuration is considered appropriate. No changes in reserve design or criteria are, therefore, proposed.

QCB surveys will not be required. If, however, QCB are incidentally observed in a non-hardline area in this QMU (i.e., amendment areas, criteria areas, PMA), avoidance or mitigation for impacts will be required. Mitigation options include (1) managing preserved habitat in the QMU and/or (2) acquiring open space for QCB conservation in other QMUs. Except in the event of a QCB sighting, the non-hardline areas in this zone will not be subject to any additional requirements with regard to QCB at the time of project processing.

5.2.3 MLJ Segment

General

As noted above, the existing Preserve Design Goals and Criteria for Cores and Linkages (Subarea Plan Section 4.2.1) include minimization of impacts to narrow endemic species. This section provides standards for the implementation of that criterion with regard to QCB. The BMO's Determination of Whether Land Qualifies as a Biological Resource Core Area will be revised to specifically consider viable linkages between QCB populations within preserve or PMA areas (see Section 10.2 of this Amendment).

If QCB are observed in this segment, all observation locations within the PMA shall be avoided. If a QCB is observed outside of the PMA, take of up to 20 percent of the population within the applicable QMU shall be allowed. The population in the QMU shall be determined based on surveys conducted by the County in preserve areas, or by the project proponent in response to an observation on a proposed development parcel. The County may, at its discretion, decide not to allow a single project the full 20 percent take allotment, so that other future projects also may proceed (the allocation shall not be recalculated such that each project may impact 20 percent of an increasingly small population). If, following authorized impacts to QCB, additional individuals or populations are observed in the QMU, the take allotment may be recalculated accordingly. The resulting reserve configuration must provide for long-term viability of the species (i.e., defensible habitat blocks with appropriate connectivity).

MLJ-San Pasqual QMU

This QMU would preserve large amounts of potentially suitable habitat. Because there are no recent QCB observations, and QCB occurrence in this area is considered unlikely, the existing reserve configuration is considered appropriate. No changes to PMA boundaries are considered necessary for the purposes of coverage for QCB in this QMU.

MLJ-San Vicente QMU

The entire Category A area (QCB observation location and buffer) in the San Vicente QMU is within either the PMA or the City of San Diego's Cornerstone Lands. This habitat is situated within a much larger block of PMA. Much of the potential QCB habitat elsewhere in this QMU also is within the PMA. Again, given that there are no recent QCB observations elsewhere within this QMU, the existing PMA configuration is considered appropriate and no changes to PMA boundaries are considered necessary for the purposes of coverage for QCB in this QMU.

MLJ South QMU

Many of the QCB observation points, along with most of the Category A habitat within this QMU, are within the existing PMA. In addition, approximately 3,200 acres of land in the Daley Ranch/Hollenbeck Canyon area of the QMU that were not included in the PMA have been acquired for conservation purposes (see 1 on Figure 5-2). These lands support a number of QCB and provide for important connectivity. The combination of the existing PMA and these acquired areas would provide for defensible reserve configuration and appropriate connectivity between most of the known QCB locations in this QMU.

There are two areas where connectivity potentially could be constrained by the current configuration: (1) from the northeast to southeast slopes of Otay Mountain and (2) from just north of Marron Valley to the extreme eastern edge of the Subarea. The BMO will be revised to ensure that constraints in these areas are effectively addressed at the time specific projects are proposed in these areas (see Section 10 of this Amendment). No change in the PMA boundary is, therefore, considered necessary for the purposes of coverage for QCB in this QMU.

5.2.4 South County QMU

As described in Section 3.3 of this Amendment, most of the QCB observations within the County have been within the South County QMU. This QMU is, therefore, of particular concern with regard to the conservation of the species. The QMU is complicated in that it contains a number of MSCP designations that do not occur in, or occur in very small portions of, the other QMUs, such as Major Amendment Areas, Minor Amendment Areas, Areas Conserved Subject to Agreement, and Otay Ranch Areas Where No Take Permits will be Issued. These various categories complicate forecasts of anticipated conservation and development. Based on the areas that are already hardlined (prior to any modifications proposed by this Amendment) or acquired for preservation, many of the QCB observation points and much of the suitable habitat would be conserved (please see Section 6 of this Amendment for details). As described below, some of the areas within the other above-noted categories would be revised as a result of the proposed Subarea Plan Amendment, resulting in additional conservation of QCB locations and habitat.

Unless otherwise specifically discussed, areas that do not currently have take authorization (i.e., amendment areas) will not receive it (for the QCB or any other covered species) as a result of this Amendment. Such properties will be required to address QCB at the time they move forward with their development applications. Consistent with the existing requirements of the Subarea Plan, this process will include considerations of both QCB observation locations and

habitat linkages. For example, the development boundaries in the amendment areas on East Otay Mesa have not yet been resolved. If they (or any other areas identified by the Subarea Plan as requiring an amendment to receive take authorization) remain unresolved at the time this Amendment is adopted, the project proponents will have to address QCB conservation to the satisfaction of the USFWS, CDFG and County at the time the project-specific amendments are processed. If determined to meet the criteria of this Amendment, they could then receive take authorization. If the development boundaries on all or part of the property are resolved as part of the approval of this Amendment, the project will not be required to meet any additional subsequent conditions with regard to QCB.

General Avoidance/Mitigation Requirements

Lands that are in existing Take Authorized Areas or that are processing Major Amendments as part of this Amendment (i.e., Otay Ranch Villages 13, 14 and 15) will not be subject to any QCB avoidance/minimization/mitigation requirements. If QCB are observed in an area where boundaries for QCB conservation have not been fixed as a result of this Amendment (i.e., amendment areas and the Limited Development Area in Otay Ranch), avoidance/mitigation requirements will depend upon whether the location of the sighting is in a biologically defensible area. "Defensible" is hereby defined as occurring within a larger matrix of at least 100 acres of native habitats that are connected with other QCB populations through viable habitat linkages.

If the QCB observation is in a defensible area, at least two-thirds of the population shall be conserved as part of the development review process. For the Limited Development Area or properties that have an existing approved Tentative Map, this shall be accomplished through a boundary adjustment, providing for no net loss of development value, if possible. The process for addressing a potential boundary adjustment is described in Section 10.5 of this Amendment.

If a QCB is observed in an area that does not have long-term potential for conservation, occupied QCB habitat shall be acquired elsewhere in the QMU at a 2:1 ratio in a defensible location. If no occupied QCB habitat is available for acquisition, the proponent shall undertake QCB habitat restoration/enhancement at a 1:1 ratio in an existing preserve area to be determined by the County in consultation with the USFWS. A restoration enhancement plan shall be prepared to the satisfaction of the County. The plan shall include removal of non-native species and introduction of larval host and nectar resource plants, along with a maintenance and monitoring program.

Areas of Overlap with the City of Chula Vista

The County wishes to ensure consistency with the City of Chula Vista's Subarea Plan for those development areas where the two plans overlap. The requirements of the City's plan for those areas are hereby incorporated by reference. Regardless of whether the City's plan is actually adopted, those requirements shall apply.

Habitat Acquisitions

Several areas (totaling approximately 1,707 acres) previously identified as Major Amendment or Take Authorized Areas have since been acquired for conservation purposes in the Daley Ranch/Hollenbeck Canyon, Los Montañas and San Miguel Mountain areas (Figure 5-2). One

QCB has been observed on the USFWS Refuge on Los Montañas and 42 have been observed in the Daley Ranch/Hollenbeck Canyon area. Although the San Miguel Mountain areas acquired for conservation are not known to support the QCB, they may support the species and certainly contribute to connectivity of its habitat. These areas are shown as conserved on the maps in this document; however, no amendment to the Subarea Plan is requested to formally adopt these changes at this time.

Project-specific Modifications

The projects that seek to change their development boundaries and/or take authorization status through this proposed Amendment are as follows:

Otay Ranch Resort Site (Village 13)

The MSCP Subarea Plan shows the following categories on the Resort Site (see 2 on Figure 5-2): No Take Authorized, Take Authorized Area, Minor Amendment Area, and Otay Ranch Areas Where No Take Permits will be Issued. A number of QCB have been observed in various portions of the site. The applicant (Otay Ranch Company) has, therefore, been involved in negotiations with the Wildlife Agencies over the past several years to revise the approved development configuration. The proposed configuration, along with the existing MSCP designations, is illustrated in Figure 5-3. The proposed configuration would result in the development of the entire Minor Amendment Area and Otay Ranch Areas Where No Take Permits will be Issued, as well as portions of the No Take Authorized Area, while preserving some areas previously designated as Take Authorized.

The revised configuration would result in the conservation of the highest known densities on the site in the north-central portion of the site, and the preservation of several additional QCB observation points in the northeastern corner of the site, compared with the 7 observation points in scattered locations that would have been conserved with the previous configuration. The conserved locations represent the two densest clusters of observations on the site, would be located on ridgelines, and would provide connectivity with other known QCB locations to the north. The proposed reconfiguration would, therefore, provide a benefit to the species. Effects of this configuration on sensitive habitats and other covered species are addressed in Section 5.3, below. Should this proposed Amendment be approved, the project would not be subject to any additional requirements regarding amendments to the Subarea Plan or other further requirements related to the QCB.

Otay Ranch Village 14

No QCB have been observed on the portion of Village 14 requesting an amendment (3 on Figure 5-2). The "Take Authorized" portions of this village extend into Category A habitat, and potentially important linkage areas between known locations to the south and northeast (refer to Figure 4-1). Otay Land Company is proposing revisions to the existing MSCP development areas in the portion of the village that it owns (the designations for the remaining portions of the village would not be affected). The revised configuration would impact less Category A habitat than would the MSCP Take Authorized Area (Figure 5-4), providing a benefit to the species. The corridor previously proposed to be a minimum of 1,000 feet through the center of the

planning area has been reduced to 250 feet for approximately 1,000 feet of its length. This would reduce the potential for this corridor functioning as a dispersal linkage for the QCB.

Otay Ranch Village 15

The MSCP Subarea Plan shows Village 15 (see 4 on Figure 5-2) as a combination of No Take Authorized and Conserved Subject to Agreement/Major Amendment Area. The areas with the 'Conserved Subject to Agreement' designation were areas that the previous landowner was negotiating a conservation agreement on based on development within all of the Otay Ranch project; this agreement, however, was never finalized, so the area is treated as a Major Amendment Area, with the underlying planning area development envelopes originally approved through the Otay Ranch approval process representing the originally anticipated development. The Major Amendment Areas encroach into Category A habitat where 15 QCB were observed. This area also will likely be important in providing connectivity between known QCB populations located to the northeast and south. As a result, the project proponent (McMillin Land Development) has been involved in extensive negotiations with the Wildlife Agencies over the past three years to develop an acceptable reserve/development configuration. The existing and proposed configurations are illustrated in Figure 5-5.

The proposed footprint would avoid all QCB observation locations with a buffer of approximately 200 feet, and would allow for appropriate connectivity. It would, therefore, provide a substantial benefit to QCB relative to the current configuration. Effects of this configuration on other sensitive habitats and covered species are addressed in Section 5.3, below. If this Amendment is adopted, the amendment process required for the site will be deemed to have been completed, and no further requirements will be subsequently imposed.

Otay Ranch Village 17

This village (see 5 on Figure 5-2) contains areas identified as "Limited Development Areas" in the vicinity of a known significant population (29 individuals observed) of QCB. The Subarea Plan (Section 3.3.3.7) acknowledges that the configuration of the Limited Development Areas may be revised in the future. When a project is proposed in this area, the configuration shall be required to specifically address QCB, including both on-site avoidance and connectivity to off-site populations.

5.3 ANALYSIS OF CONSISTENCY

The MSCP Subregional Plan and Final EIR/EIS were adopted by the City of San Diego, the project's lead agency, and approved by the Wildlife Agencies in 1997. The Final EIR/EIS evaluation used as its basis for consideration draft Subarea Plans from participating jurisdictions, including the County. The County's Subarea Plan was adopted on October 22, 1997. This Amendment describes the changes necessary to the Subarea Plan to receive take authorization for the QCB. Each of these changes is fully consistent with the goals of the MSCP Subregional Plan, Final EIR/EIS, and County Subarea Plan.

5.3.1 General

As described in Section 1.3 of this Amendment, the MSCP Subregional Plan provides a process for addition of species to the Covered Species List. In accordance with this process, the USFWS, County and key landowners have worked together to identify the steps necessary to obtain coverage of the QCB. Consistent with the MSCP, the changes described above would meet the standards for take authorization of the species, while retaining appropriate assurances for the County and landowners. By applying criteria to project approval as applicable, the revisions also minimize the need for additional public funding for property acquisition. By adopting the City of Chula Vista's proposed QCB requirements for areas of overlap between the two Subarea Plans, the County also is ensuring consistency with the City's proposed Subarea Plan.

The previous acquisition of a number of parcels not anticipated to be conserved by the MSCP Subregional Plan or County Subarea Plan has significantly contributed to the long-term conservation of the QCB through preservation of known locations and/or important landscape linkages. These acquisitions are considered entirely consistent with, and supportive of, the goals of the Subregional Plan and Subarea Plan.

5.3.2 Otay Ranch Village 13

As noted above, the MSCP Subarea Plan shows a number of categories on the Resort Site. As part of the original Subarea Plan approval, the Baldwin Company (which then owned all of Otay Ranch) agreed to give up development rights in the area now designated as "Otay Ranch Areas Where No Take Permits will be Issued" in exchange for unrestricted development in areas previously identified as sensitive areas requiring further biological studies. The former areas have since been the subject of a conservation easement.

In light of further biological studies, the Otay Ranch Company (successor to the Baldwin Company) proposes to amend the development/conservation boundaries on the Resort Site. It now proposes development of a total of approximately 1,041 acres, compared to approximately 762 acres of Take Authorized Area and Minor Amendment Area identified in the Subarea Plan (Figure 5-3). Specifically, it would result in increases in impacts to 8 acres of cismontane alkali marsh, 35 acres of chamise chaparral and 256 acres of Diegan coastal sage scrub. Impacts to non-native grassland would decrease by approximately 20 acres (Table 5-1). The conveyance process for Otay Ranch requires that 1.188 acres of designated preserve land be conveyed to the preserve for each acre of development land. Thus, the approximately 279-acre increase in development on Village 13 would result in the conveyance of approximately an additional 331 acres of land to the preserve. One of the three vernal pool complexes that was in the Take Authorized Area also would be preserved. The proposed wildlife linkage would maintain connectivity to Lower Otay Reservoir. It would be a minimum of approximately 250 feet wide for a short distance (approximately 300 feet), but substantially wider (generally between 1,500 and 2,000 feet) throughout the remainder of its length.

Table 5-1
COMPARISON OF VILLAGE 13 VEGETATION IMPACTS

VEGETATION TYPE	CONFIGURATION IMPACTS			
	Existing		Proposed	
	Acre(s)	Percent	Acre(s)	Percent
Cismontane alkali marsh	15.6	46	24.0	71
Southern willow scrub	0.7	100	0.7	100
Open water	1.0	100	0.0	100
Diegan coastal sage scrub	380.3	48	636.5	80
Chamise chaparral	152.8	72	187.8	88
Non-native grassland	211.3	98	191.6	89
Disturbed habitat	0.0	0	< 0.1	100
TOTAL	**761.7**	**61**	**1,040.7**	**83**

As described above, this alternative would provide benefit to the QCB by increasing the number of observation locations conserved, and doing so in a viable configuration. With regard to other covered species, data from Ogden (1992) were compared against the existing and proposed designations (with Take Authorized and Minor Amendment Areas assumed to be impacted under the existing designations). As shown in Table 5-2, the proposed project configuration would increase impacts to variegated dudleya (*Dudleya variegata*), San Diego barrel cactus (*Ferocactus viridescens*) and narrow-leaved nightshade (*Solanum tenuilobatum*). Impacts to San Diego goldenstar (*Muilla clevelandii*) would be reduced, and impacts to federal-listed threatened and state-listed endangered San Diego thornmint (*Acanthomintha ilicifolia*) would remain the same as would occur under the current configuration. The proposed configuration also would eliminate impacts to burrowing owl (*Athene cunnicularia*). No coastal California gnatcatchers (*Polioptila californica californica*) were noted as occurring on the site. Because of the anticipated benefit to the QCB, the relatively small populations of the other covered species that occur on the site, the relative ease of transplantation of San Diego barrel cactus, and the requirement to convey additional land to the preserve, the proposed amendment is considered consistent with the MSCP Subregional Plan and County Subarea Plan.

Table 5-2
COMPARISON OF VILLAGE 13 COVERED SPECIES IMPACTS

COVERED SPECIES	CONFIGURATION IMPACTS			
	Existing		Proposed	
	Locations Observed	Percent	Locations Observed	Percent
San Diego thorn-mint (*Acanthomintha ilicifolia*)	2	100	2	100
Variegated dudleya (*Dudleya variegata*)	3	43	5	71
San Diego barrel cactus (*Ferocactus viridescens*)	7	58	10	83
San Diego goldenstar (*Muilla clevelandii*)	2	100	1	50
Narrow-leaved nightshade (*Solanum tenuilobatum*)	7	47	13	87
Burrowing owl (*Athene cunnicularia*)	1	100	0	0

5.3.3 Otay Ranch Village 14

The reconfiguration proposed by the landowner would result in impacts to approximately 302 acres, compared with 271.6 acres on which take was previously authorized (Figure 5-4). As shown on Table 5-3, the reconfiguration would result in increased impacts to cismontane alkali marsh (1 acre), Diegan coastal sage scrub (25 acres) and non-native grassland (10 acres). Impacts to chamise chaparral would decrease by approximately 6 acres. The large vernal pool located in the existing corridor area would also be at least partially impacted. Similar to the situation described above for Village 13, the approximately 30-acre increase in development area

would result in a requirement for an additional approximately 36 acres to be conveyed to the preserve. The currently proposed project would constrict (to approximately 250 feet for a distance of approximately 1,000 feet) the approximately 1,200-foot wide northeast-southwest trending wildlife corridor identified by the MSCP. It also would impact a large vernal pool that was in the 'No Take Authorized' area.

Table 5-3
COMPARISON OF VILLAGE 14 VEGETATION IMPACTS

VEGETATION TYPE	CONFIGURATION IMPACTS			
	Existing		Proposed	
	Acre(s)	Percent	Acre(s)	Percent
Cismontane alkali marsh	6.3	21	7.4	25
Diegan coastal sage scrub	59.8	34	85.2	82
Chamise chaparral	205.4	63	199.0	61
Non-native grassland	< 0.1	< 1	10.1	42
TOTAL	**271.6**	**49**	**301.7**	**54**

As described for Village 13, impacts to sensitive species other than the QCB were compared using data from Ogden (1992). As illustrated in Table 5-4, the proposed configuration would decrease impacts to San Diego goldenstar compared to the existing configuration. Impacts to Orcutt's brodiaea (*Brodiaea orcuttii*), narrow-leaved nightshade, and federal- and state-listed endangered San Diego button celery (*Eryngium artsulatum* var. *parishi*) would be increased. Impacts to variegated dudleya would remain the same.

Table 5-4
COMPARISON OF VILLAGE 14 COVERED SPECIES IMPACTS

COVERED SPECIES	CONFIGURATION IMPACTS			
	Existing		Proposed	
	Locations Observed	Percent	Locations Observed	Percent
Orcutt's brodiaea (*Brodiaea orcutti*)	1	14	2	29
Variegated dudleya (*Dudleya variegata*)	1	100	1	100
San Diego button celery (*Eryngium artsulatum* var. *parishii*)	0	0	1	50
San Diego goldenstar (*Muilla clevelandii*)	4	80	3	60
Narrow-leaved nightshade (*Solanum tenuilobatum*)	7	47	9	60

5.3.4 Otay Ranch Village 15

Portions of Otay Ranch Village 15 totaling approximately 540 acres were designated by the Subarea Plan as Conserved Subject to Agreement/Major Amendment Area, while the remaining areas were designated as No Take Authorized. The proposed project would develop a total of approximately 307 acres of the site (Figure 5-5; Table 5-5). The approximately 230-acre reduction is primarily comprised of coastal sage scrub (approximately 192 acres) and chamise chaparral (approximately 37 acres). Impacts to riparian habitat, southern interior cypress forest and non-native grassland also would be reduced; impacts to coastal freshwater marsh/open water would be eliminated.

Table 5-5
COMPARISON OF VILLAGE 15 VEGETATION IMPACTS

VEGETATION TYPE	CONFIGURATION IMPACTS			
	Existing		Proposed	
	Acre(s)	Percent	Acre(s)	Percent
Coastal freshwater marsh/open water	0.3	26	0.0	0
Riparian	3.2	24	0.3	2
Southern interior cypress forest	0.8	48	< 0.1	< 1
Diegan coastal sage scrub	332.8	49	143.4	21
Chamise chaparral	198.9	80	162.3	65
Non-native grassland	1.9	86	0.9	41
Eucalyptus woodland	0.2	67	0.2	67
Disturbed habitat	1.0	83	0.0	0
Developed	0.5	100	0.0	0
TOTAL	**539.6**	**56**	**307.2**	**32**

As noted above, the proposed project would avoid the area where 15 QCB were observed, which was within the area Conserved Subject to Agreement/Major Amendment Area. In addition to avoiding all QCB observation points in an appropriate configuration (see above), the proposed configuration would avoid impacts to vernal pools (a complex of which is in the Major Amendment Area in the northeastern portion of the site), and would minimize impacts to other sensitive species (based on 2002 data from HELIX) relative to the existing Major Amendment Area configuration (Table 5-6). With regard to sensitive plant species, impacts to Orcutt's brodiaea (*Brodiaea orcuttii*) and variegated dudleya located within the Major Amendment Area would be avoided. In addition, impacts to Tecate cypress (*Cupressus forbesii*), San Diego barrel cactus and San Diego goldenstar would be substantially reduced relative to the Major Amendment Area. Impacts to federal-listed threatened coastal California gnatcatcher would remain the same (three pair) under either scenario. In no case would the reconfiguration result in greater impacts to sensitive species than could have occurred if development of the Major Amendment Area were approved.

In addition, the revised configuration would widen the corridors originally envisioned to Lower

Otay Reservoir and expand the amount of preservation across the southeastern portion of the site (including a reduction in the amount of development/preserve interface). Because of the level of conservation it would achieve for the QCB and other covered species, the proposed project is considered consistent with the MSCP Subregional Plan and County Subarea Plan.

Table 5-6
COMPARISON OF VILLAGE 15 COVERED SPECIES IMPACTS

COVERED SPECIES	CONFIGURATION IMPACTS			
	Existing		Proposed	
	Individuals Observed	Percent	Individuals Observed	Percent
Plant Species				
Orcutt's brodiaea (*Brodiaea orcuttii*)	6	50	0	0
Tecate cypress (*Cupressus forbesii*)	612+	33	4	< 1
Variegated dudleya (*Dudleya variegata*)	990	86	0	0
San Diego barrel cactus (*Ferocactus viridescens*)	35	26	14	10
San Diego goldenstar (*Muilla clevelandii*)	520	60	174	20
Animal Species				
San Diego horned lizard (*Phrynosoma coronatum blainvillei*)	2	67	1	33
Coastal California gnatcatcher (*Polioptila californica californica*)	3 pair	100	3 pair	100
Cooper's hawk (*Accipiter cooperii*)	0	0	0	0
Golden eagle (*Aquila chrysaetos*)	0	0	0	0
Northern harrier (*Circus cyaneus*)	0	0	0	0
Southern mule deer (*Ococoileus hemionus fuliginata*)	0	0	1	100

5.3.5 Otay Ranch Village 17

The MSCP specifically acknowledges that the Limited Development Areas in this village are subject to revision in the future. As described in Section 5.2.4 above, this Amendment would require the development configuration in this area to address the QCB specifically. Although the configuration is not known at this time, by requiring any future revision to consider all covered species (including QCB, if it is added), the proposed revision is consistent with the MSCP.

6.0 SUMMARY OF CONSERVATION AND TAKE ESTIMATES

6.1 DESCRIPTION OF CONSERVATION AREAS

Areas designated for preservation or potential preservation that could potentially benefit the QCB occur throughout the Subarea (although those in the southern portion of the County are considered more likely to support the species). Through the MSCP, habitats were set aside in defensible reserve configurations with adequate linkages between them. As described in Section 5, the areas previously designated as hard-line preserves and PMA are generally expected to be in an appropriate conservation configuration for the QCB as well. These known QCB locations generally occur within a large block of habitat designated for conservation, connected by identified habitat linkages (Figure 6-1).

6.2 METHODS

This conservation and impact analysis considers lands based on their MSCP designation (e.g., Take Authorized Area, Criteria Area, Major Amendment Area). This is necessary because each designation carries with it differing requirements that affect the potential conservation of the QCB (as described in Section 5). It was not considered reasonable, therefore, to separate lands in the County's Subarea into simply 'Conserved' or 'Not Conserved.'

In cases where the MSCP designation is no longer applicable (e.g., land designated as 'Take Authorized' has been acquired for conservation, land within the PMA that has been approved for development), the areas have been recategorized as appropriate for the calculations presented in this section, so that they reflect the most up-to-date available information (but no formal amendments to the MSCP to reflect these designations are proposed). Because this Amendment includes proposed amendments for several properties, the impact/conservation levels are presented based on both the existing and proposed designations as applicable.

6.3 SUMMARY OF MODELED HABITAT CONSERVATION/IMPACT

6.3.1 Lake Hodges QMU

All of the land in the Lake Hodges QMU falls within Category C, indicating that it has relatively low potential to support QCB. Of the remaining potential habitat, however, 57 percent either have already been conserved or are hardlined for preservation (Table 6-1). Another 7 percent are within the PMA, at least 75 percent of which would be conserved. Areas of potential habitat that have a greater probability of being developed in the future include 24 percent of the Category C habitat in Take Authorized areas, 4 percent in Major and Minor Amendment Areas and 7 percent in Criteria Areas. Thus, although QCB are not considered likely to occur in this QMU, a large proportion of their potential habitat has been/would be conserved under the existing Subarea Plan designations.

Table 6-1 LAKE HODGES QMU IMPACTS/CONSERVATION				
MSCP DESIGNATION	**CATEGORY**			**TOTAL**
	A	**B**	**C**	
Preserved Habitat	0	0	2,895	2,895
Hardline Preserve Areas	0	0	767	767
Pre-approved Mitigation Areas	0	0	478	478
Criteria Areas	0	0	471	471
Minor Amendment Areas	0	0	249	249
Major Amendment Areas	0	0	29	29
Take Authorized	0	0	1,545	1,545
TOTAL	**0**	**0**	**6,434**	**6,434**

6.3.2 San Pasqual QMU

Land within the San Pasqual QMU includes both Categories B and C, indicating that no QCB have been observed in the vicinity, and the area is believed to have relatively low to moderate potential to support the species. Approximately half of the potentially suitable QCB habitat in the San Pasqual QMU is within the PMA (Table 6-2). Although these lands are not hardlined for preservation, they must meet certain requirements before development approvals can be granted (see Sections 5.2.1 and 5.2.3 of this Amendment) and at least 75 percent of the area would be preserved. In addition, approximately 25 percent of the modeled habitat in the QMU already has been preserved. The remaining 21 percent is within Criteria Areas, which, although not as strongly preferred for conservation as the PMA, also must meet the specified requirements before development can be approved. Although the amount of potentially suitable habitat that ultimately will be impacted/conserved cannot be said with certainty, the existing and proposed standards would require consideration of the QCB habitat and ensure an appropriate level of conservation.

Table 6-2 SAN PASQUAL QMU IMPACTS/CONSERVATION				
MSCP DESIGNATION	**CATEGORY**			**TOTAL**
	A	**B**	**C**	
Preserved Habitat	0	1,825	0	1,825
Pre-approved Mitigation Areas	0	3,927	5	3,932
Criteria Areas	0	1,578	320	1,898

TOTAL	**0**	**7,330**	**325**	**7,655**

6.3.3 San Vicente QMU

As shown in Table 6-3, virtually all of the Category A habitat in the San Vicente QMU either has already been preserved or is in the PMA (80 and 19 percent, respectively). Of the Category B habitat, approximately 19 percent has been preserved and another 43 percent is within the PMA. Only approximately 2 percent of Category B habitat is Take Authorized and 35 percent is within Criteria Areas. Finally, in Category C (the lowest suitability habitat), approximately 19 percent already has been preserved and 39 percent is in Criteria Areas. Thus, substantial amounts of habitat considered suitable for QCB would be preserved by existing or already planned conservation, with preservation weighted toward those habitats considered to have the greatest suitability to support the QCB. Although it cannot be predicted how much of the PMA ultimately will be conserved, the requirements associated with development approvals in this area (requiring at least 75 percent conservation), taken in combination with the Category A and B habitat already preserved, are considered to provide an appropriate level of habitat conservation for the QCB.

Table 6-3
SAN VICENTE QMU IMPACTS/CONSERVATION

MSCP DESIGNATION	CATEGORY			TOTAL
	A	B	C	
Preserved Habitat	572	5,913	456	6,941
Hardline Preserve Areas	0	183	0	183
Pre-approved Mitigation Areas	135	13,381	848	14,364
Criteria Areas	0	10,610	4,065	14,675
Take Authorized	2	462	0	464
TOTAL	**709**	**30,549**	**5,369**	**36,627**

6.3.4 MLJ South QMU

As shown on Table 6-4, approximately 73 percent of the Category A habitat in the MLJ South already has been preserved. Most of the remaining Category A habitat (22 percent) is in Criteria Areas. Of the Category B habitat, approximately 26 percent already has been preserved. Approximately 20 percent is within the PMA and 54 percent is within Criteria Areas. Of the Category C habitat, approximately 10 percent has been preserved and 25 percent is in the PMA. Most of the remainder (approximately 65 percent) is within Criteria Areas. Although, as noted above, the amount of habitat in the PMA and Criteria Areas that ultimately be preserved cannot be predicted, the applicable development criteria (including requirement for conservation of at least 75 percent of the PMA), in combination with the habitat already preserved, are anticipated to conserve a significant amount of occupied and potential habitat for the QCB in this area.

Table 6-4 MLJ SOUTH QMU IMPACTS/CONSERVATION				
MSCP DESIGNATION	**CATEGORY**			**TOTAL**
	A	**B**	**C**	
Preserved Habitat	3,475	12,766	365	16,606
Hardline Preserve Areas	0	3	0	3
Pre-approved Mitigation Areas	209	9,880	949	11,038
Criteria Areas	1,073	26,721	2,495	30,289
Minor Amendment Areas	0	9	0	9
Take Authorized	3	1	19	23
TOTAL	**4,760**	**49,380**	**3,828**	**57,968**

6.3.5 South County QMU

As described in Section 5.2.4, this Amendment proposes to change the MSCP designations for several properties in the South County QMU. Table 6-5 shows the anticipated impacts/conservation of modeled QCB habitat under the current situation. Approximately 69 percent of the Category A habitat in the QMU has already been preserved or is within a Hardline Preserve Area (41 and 28 percent, respectively). Another 17 percent is in amendment areas. Approximately 13 percent of Category A habitat is within a Take Authorized Area, State Jail Facility or Criteria Area.

Similarly, approximately 87 percent of Category B habitat has already been preserved or is in a Hardline Preserve Area (66 and 21 percent, respectively) and 6 percent is in amendment areas. Finally, approximately 6 percent is within a Take Authorized Area, State Jail Facility or Criteria Area.

There is relatively little Category C habitat in the South County QMU. Of this category, approximately 69 percent already has been preserved and 10 percent is in a Hardline Preserve Area. Another 13 percent is in Minor Amendment Areas. Approximately 8 percent is in a Take Authorized Area, State Jail Facility or Criteria Area.

The existing levels of conservation/MSCP designations, therefore, offer a substantial level of protection to occupied and potential QCB habitat in the South County QMU.

Table 6-5 SOUTH COUNTY QMU IMPACTS/CONSERVATION (Without Proposed Amendments)				
MSCP DESIGNATION	**CATEGORY**			**TOTAL**
	A	**B**	**C**	
Preserved Habitat	7,554	19,957	400	27,911

Hardline Preserve Areas	5,120	6,419	61	11,600
Otay Ranch Areas Where No 'Take Permits' Will Be Issued	223	123	0	346

Table 6-5 (cont.)

MSCP DESIGNATION	CATEGORY			TOTAL
	A	B	C	
Preapproved Mitigation Areas	0	8	0	8
Criteria Areas	158	128	20	306
Minor Amendment Areas	532	452	76	1,060
Minor Amendment Subject to Special Consideration	370	26	0	396
Major Amendment Areas*	2,310	1,313	0	3,623
Take Authorized**	2,199	1,672	25	3,896
TOTAL	18,466	30,098	582	49,146

*Includes areas Conserved Subject to Agreement with Wildlife Agencies

**Includes State Jail Facility

6.4 SUMMARY OF CRITICAL HABITAT CONSERVATION/IMPACT

The vast majority of the area affected by the PCHD would be preserved under the existing MSCP designations (Table 6-6). Approximately 70 percent of the PCHD within hardline preserve areas already has been acquired for conservation (51 percent and 19 percent, respectively). The remaining amount potentially eligible for future development represents less than 30 percent of the PCHD. It is likely that a relatively large proportion of this land will be conserved as a result of the project processing requirements currently existing and/or proposed as part of this Amendment.

Table 6-6
SUMMARY OF CRITICAL HABITAT IMPACTS/CONSERVATION (acre[s])

MSCP DESIGNATION	QMU		TOTAL	
	South County	MLJ South	Acres	Percent
Conserved Habitat	22,433	3,551	25,984	57
Hardline Preserve Areas	9,568	0	9,568	19
Otay Ranch Areas Where No 'Take Permits' Will Be Issued	347	0	347	1
Preapproved Mitigation Areas	0	92	92	<1

Criteria Areas	4,963	4,220	9,183	18
Minor Amendment Areas/ Minor Amendment Subject to Special Consideration	806	1	807	2
Major Amendment Areas	2,618	0	2,618	5
Take Authorized	2,053	0	2,053	4
TOTAL	42,788	7,864	50,652	100

6.5 SUMMARY OF QCB POPULATION CONSERVATION/IMPACT

At least 20 of the 23 known populations would be conserved under the proposed Amendment (Table 6-7). Village 13 has been redesigned to increase QCB conservation, and now conserves approximately two-thirds of that population. The northern portions of the East Otay Mesa population north of the East Otay Mesa Specific Plan have already been conserved, and represent approximately 20 percent of the QCB locations in this population. The East Otay Mesa Specific Plan would need to meet QCB avoidance criteria outlined in Section 5.2.4, resulting in conservation of at least two-thirds of this critical population. Given that over 80 percent of the population within the South County QMU would be preserved, some or all of the Southeast Dulzura population could be potentially impacted in accordance with Section 5.2.3 of this Amendment. Additional populations that are identified in the future would only add to the overall conservation of the QCB.

Table 6-7
SUMMARY OF QCB POPULATION IMPACTS/CONSERVATION

LOCATION # ON FIGURE	LOCATION	DESCRIPTION	IMPACTS/ CONSERVATION
South County QMU			
1	East Otay Mesa	East Otay Mesa Specific Plan – multiple locations, multiple sightings	Two-thirds Conserved
2	Southern Otay Mountain	Upper portions of southern slope of Otay Mountain – two locations	Conserved
3	O'Neal Canyon	Upper reaches of O'Neal Canyon – single location	Conserved
4	Village 15	Otay Ranch Village 15 – three locations, multiple sightings	Conserved
5	Village 15 East	Otay Ranch Village 15 Eastern end – one location, multiple sightings	Conserved
6	Village 13	Otay Ranch Village 13 – multiple locations, multiple sightings	Two-thirds Conserved
7	Thousand Trails	Just south of Thousand Trails – single location, single sighting	Conserved

8	Village 17	Village 17 – single location, multiple sightings	Conserved
9	Village 14	Otay Ranch Village 14 – single location, multiple sightings	Conserved
10	Village 16	Otay Ranch Village 16 – single location, multiple sightings	Conserved

Table 6-7 (cont.)			
LOCATION # ON FIGURE	**LOCATION**	**DESCRIPTION**	**IMPACTS/ CONSERVATION**
South County QMU			
11	Hidden Valley	Hidden Valley Estates – single location, single sighting	Conserved
12	Northwest Jamul	Northwest Jamul – single location, single sighting	Conserved
13	Rancho San Diego	San Diego National Wildlife Refuge – multiple locations, multiple sightings	Conserved
14	Las Montañas	San Diego National Wildlife Refuge – single location, single sighting	Conserved
South Metro-Lakeside Jamul QMU			
15	Daley Ranch	Daley Ranch South of Hwy 94 – single location, multiple sightings	Conserved
16	Sycamore Canyon	Sycamore Canyon – four locations, multiple sightings	Conserved
17	Marron Valley North	Northern portion of Marron Valley – multiple sightings, multiple locations	Conserved
18	Marron Valley South	Southern portion of Marron Valley – multiple sightings, multiple locations	Conserved
19	Southeast Dulzura	Southeast of Dulzura – one location, multiple sightings	Potentially Impacted
20	Daley Ranch South	Daley Ranch Southwestern Area – single location, multiple sightings	Conserved
21	Daley Ranch Central	Daley Ranch Central – multiple locations, multiple sightings	Conserved
22	Daley Ranch North	Daley Ranch North of Hwy 94 – multiple locations, multiple sightings	Conserved
San Vicente QMU			
23	Boys and Girls Club	North of San Vicente Reservoir – single location, single sighting	Conserved

7.0 ALLOWED LAND USES IN THE PRESERVE

As described in Section 1.9 of the Subarea Plan, land uses allowed within the preserve are specifically limited to those which are considered compatible with the need to permanently protect natural resources. Activities allowed within the preserve must be consistent with the applicable Habitat Management Plan and Framework Management Plan. The land uses that would be allowed within the Preserve, along with any required conditions or minimization measures, are described in the following subsections.

7.1 EXISTING USES

Until open space has been dedicated through processing of maps, existing uses (including annual clearing, maintenance and replacement of existing facilities, roads and structures) may continue in areas shown as preserve. No expansion of such uses or clearing of additional areas may occur unless appropriate local, state and federal permits have first been obtained (see Subarea Plan Section 1.9.1). After conveyance or agreement (i.e., Irrevocable Offer of Dedication), land uses within the preserve will be limited to those uses considered compatible with the preserve. This Amendment does not affect the provisions of the Subarea Plan with regard to existing uses.

7.2 BRUSH MANAGEMENT

Residential, industrial, institutional and commercial uses are generally to be separated from the preserve by a fuel modification zone. As described in Subarea Plan Section 1.9.5.1, fire management activities are permitted within the preserve when conducted according to a fire management plan approved by the Wildlife Agencies, County and appropriate fire district as part of area-specific management directives. Section 1.11 of the Subarea Plan contains the guidelines for management of the fuel modification zone. Specific requirements for fuel modification zones are provided in Sections 2.5.1 and 3.4.3 for the Lake Hodges and South County segments, respectively. The requirements of the Subarea Plan with regard to brush management activities are not affected by this Amendment.

7.3 SCIENTIFIC AND BIOLOGIC ACTIVITIES

As described in Subarea Plan Section 1.9.4, all scientific, research, monitoring and habitat restoration and enhancement activities are permitted within the preserve, subject to approval by the preserve manager/landowner, obtaining any necessary permits, and the requirements specified in the Subarea Plan. These requirements are not affected by this Amendment.

7.4 EMERGENCY, SAFETY AND POLICE SERVICES

The MSCP preserve system must accommodate access for emergency response, fire control and management, and enforcement of immigration laws, as described in detail in Section 1.9.5 of the Subarea Plan. Each of the preserve management plans is to include provisions for enforcement of immigration laws. Neither the Subarea Plan nor this Amendment places any restrictions on these necessary services.

7.5 AGRICULTURE

7.5.1 Existing Requirements

Objective 8 of the Otay Ranch Resource Management Plan (RMP; City of Chula Vista and County of San Diego 1993) provides that existing agricultural uses, including cultivation and grazing, be permitted to continue as an interim activity (until conveyance into the preserve) where they have occurred historically and continually. No increase in irrigation (except for temporary irrigation for restoration plans) is to be allowed, nor is grazing by sheep and goats. Cattle grazing is to be phased out in accordance with the conveyance program and the Range Management Plan. The Otay Ranch RMP (Section 5.9), however, also provides that the preserve will provide opportunities for creation of demonstration agricultural uses. Specifically, the area in the vicinity of Bird Ranch has been identified as suitable for such use. Demonstration agricultural activities are required to be compatible with RMP policies and standards for resource protection and enhancement.

Grazing is specifically included as a use allowed to continue in the preserve on the 4S Ranch property in the Lake Hodges Segment, consistent with the approved Habitat Management Plan (see Subarea Plan Section 2.7.1).

7.5.2 Proposed Additional Requirements

In order to protect (and allow for the potential recovery of) potential QCB habitat, except in areas where agricultural activities were specifically anticipated to continue under the MSCP, grazing and agricultural practices generally shall be considered incompatible with lands conveyed to the preserve. It shall not, therefore, be allowed to continue following conveyance or agreement, unless it is deemed to have a neutral or positive impact on habitat values by the County, with concurrence from the Wildlife Agencies.

7.6 PUBLIC ACCESS AND RECREATION

7.6.1 Existing Requirements

Public access and passive recreation (as defined in Subarea Plan Section 1.9.2.C) are permitted uses within specified areas of the preserve. Access points, new trails and facilities, and a public control plan are to be included in the framework habitat management plans and area-specific management directives. The Open Space Preserve Management Plans are required to address litter and trash removal. Additional information about public access and recreation in the Lake Hodges Segment is contained in Subarea Plan Section 2.7.2. In accordance with Section 5.8 of the Otay Ranch RMP, 400 acres within the preserve on Otay Ranch (overlapping with the City of Chula Vista Subarea Plan) are available for "active recreational uses," subject to policies and guidelines stated under RMP Objective 6, which are intended to minimize potential impacts.

Section IV.B.2 of the County's Draft Framework Management Plan (FMP; 2001) provides

management directives to ensure that public access, trails and recreational uses are accommodated in concurrence with the goals of the MSCP Subregional Plan and County Subarea Plan. Trails, view overlooks and staging areas are to be located in the least sensitive areas of the preserve. Another one of the Priority 1 tasks identified is to identify and map narrow endemics, critical populations and all covered species populations in the preserve so that these areas can be avoided and monitored. The FMP also provides that new trail construction widths should be minimized to reduce impacts to critical resources, and that the extent and location of equestrian trails should be limited to the least sensitive areas of the preserve.

Public access management measures identified in the FMP that may potentially benefit the QCB include the following: (1) provide signage to identify access points; (2) provide barriers to protect highly sensitive areas; (3) clearly demarcate and monitor trails for degradation; and (4) remove litter and trash on a regular basis and impose penalties for littering and dumping.

Public off-highway recreational vehicle (OHV) activity within MSCP preserve areas is incompatible with the goals of the MSCP (see Subarea Plan Section 1.9.2.1). OHV trails in the Lake Hodges and South County segments are required to be located outside of proposed and dedicated preserve areas. OHV trails within the Metro-Lakeside-Jamul Segment, but outside of proposed or dedicated preserve areas, will be considered a project and will be subject to the provisions of the MSCP Subregional Plan, County Subarea Plan and BMO. OHV activity on BLM lands will be managed in accordance with the BLM Resource Management Plan. The Subarea Plan does not affect legal access across preserve lands to private in-holdings or OHV use in order to engage in other allowed uses.

7.6.2 Proposed Additional Requirements

While the FMP indicates that dirt roads should be followed as much as possible in siting trails, these areas are often the location of QCB sightings. In order to avoid potential impacts, recreational uses will be subject to the measures described below in Section 7.7, Infrastructure. Unlike infrastructure impacts, however, impacts to occupied QCB habitat from trails shall be completely avoided (i.e., minimization is not sufficient). To minimize long-term impacts associated with recreational activities, the managing entity shall be authorized to prevent public access to occupied habitat during the QCB active flight season. As described in Section 5.2.4 of this Amendment, the active recreation areas on Otay Ranch will be subject to the requirements specified in the City of Chula Vista's Subarea Plan with regard to QCB.

7.7 INFRASTRUCTURE

7.7.1 Existing Requirements

Section 1.9.3 of the Subarea Plan describes the infrastructure allowed within the preserve. Take for infrastructure projects within the preserve, other than the categories identified in the Subarea Plan, must be authorized through the major or minor amendment process. Current maintenance and operation activities for public infrastructure, including access road maintenance, clearing/desilting of flood/drainage control facilities, and ongoing maintenance of cleared areas, are allowed consistent with existing local, state and federal laws and regulations. Anticipated

infrastructure requirements in the Lake Hodges Segment are described in Subarea Plan Section 2.7.3.

Infrastructure necessary for and incidental to development projects within the Lake Hodges and South County segments that contribute open space to the MSCP preserve is specifically permitted within the preserve. Mitigation for disturbance inside the preserve due to such infrastructure is required in accordance with the Subarea Plan. Maintenance and operation of such facilities are to be allowed in accordance with standard practices existing at the time of completion, including access road maintenance.
The County is required to make specified findings for (1) the construction of new or modification of existing circulation element road corridors within all segments of the Subarea Plan; (2) take of covered species resulting from the construction and operation of public infrastructure facilities within the Metro-Lakeside-Jamul Segment, other than preserved areas; and (3) to provide an exemption for public facilities or public projects determined to be essential by the County (Article III.A.9). The findings include requirements that (1) all feasible mitigation measures have been incorporated into the facility, project or recreational facility, and (2) that there are no feasible, less environmentally damaging locations, alignments or non-structural alternatives that would meet project objectives. All critical populations of Rare Narrow Endemic Animal Species within the County's Subarea (Attachment D of the BMO, specifically including the QCB) must be avoided as required by and consistent with the Subarea Plan and BMO. For projects that are not exempted, the BMO provides project design criteria, including that project development shall be sited in areas that minimize impact to habitat, and that the County consider reduction in road standards to the maximum extent consistent with public safety considerations (Article V.A).

7.7.2 Proposed Additional Requirements

For the purposes of the above-noted findings, 'critical populations' of QCB are hereby defined to include (a) locations where 10 or more individuals are sighted in a given year or (b) 10 percent of the population in the QMU, whichever is larger. To provide for the avoidance/minimization of infrastructure impacts to QCB, the following sequence of measures shall be added to the required findings for all infrastructure projects, to the extent applicable:

1. A habitat assessment will be conducted for all potential facility locations that lie within both the USFWS 2002 Recommended Survey Area and the Eastern QCB Survey Limit Line (see Figure 5-1) as part of the project siting and design process. General and/or Focused Habitat Assessments, as described in Section 5.2.1 of this Amendment, will be conducted as part of the project siting and design process.

2. If appropriate habitat (as determined through the site-specific habitat assessment) is determined to occur, surveys will be conducted by a qualified biologist, as follows:

    a. If the area is within five miles of a known QCB location, surveys shall be conducted in accordance with then-current USFWS protocols

    b. If the area is beyond five miles from a known QCB location, two surveys shall be

conducted during the flight season, with at least one in the middle of the flight season, following the same weather requirements as the then-current USFWS protocols

3. If QCB are observed within the proposed project impact footprint, the project will be designed to avoid direct impacts to known locations to the maximum extent feasible. Although a lower priority, reasonable efforts also shall be made to minimize habitat fragmentation and impacts to habitat that is unoccupied but identified as suitable (avoidance is not required).

4. The following avoidance criteria will be applied specifically to Category A habitat areas located in the preserve east of State Route 125 within the South County QMU:

    a. A detailed habitat assessment will be conducted, including mapping patches of *Plantago erecta* and other host plants, if applicable. In this area, if dense patches of plantago greater than 50 square meters in area are found on ridgelines or mesa tops, in a matrix of sage scrub or grassland that has not been subject to extensive invasion by non-native plant species, such patches shall be considered "significant QCB habitat patches." In addition, if dense patches of plantago greater than 150 square meters in area are found in canyonsides or drainage bottoms, in a matrix of sage scrub or grassland that has not been subject to extensive invasion by non-native plant species, such patches shall be considered "significant QCB habitat patches."

    b. Projects shall be designed to avoid "significant QCB habitat patches" to the maximum extent practicable, regardless of whether QCB are observed. If impacts to these habitat patches cannot be avoided, the County will consult with the USFWS and the Wildlife Agencies will cooperatively work with the County to site the proposed facility in a location that will best minimize impacts to QCB habitat. The County will submit a written request for input to the USFWS. The USFWS will meet and confer with the County and, no later than 60 days after receipt by the Wildlife Agencies of written notice from the County, resolution on the appropriate location of the proposed facility will be completed.

    c. During joint review of a project proposing to impact one or more "significant QCB habitat patches," a cooperative assessment will be made by the County and USFWS to determine the overall significance of the proposed impacts to "significant QCB habitat patches." The assessment will be made within the context of the quality and location of other QCB habitat within the preserve at the time of the assessment. Evaluation of proposed project impacts to significant habitat patches also shall take into consideration all of the other components of the County's QCB program.

5. For construction in areas adjacent to occupied habitat, dust control measures (i.e., watering) will be applied during grading activities. A qualified biological monitor shall ensure that such measures are being employed.

6. As part of the overall preserve management strategy, a weed control program will be established for all water/sewer line access roads built through potential QCB habitat. The zone of influence to be subject to the weed control program, as well as its required elements, will be determined by the applicable habitat manager based on site-specific conditions. The habitat manager also will be responsible for implementation of the program.

In the context of this Amendment, "feasible" refers to minor changes in alignments or locations. These changes shall not involve extraordinary engineering design, including but not limited to tunnels, bridges or other significantly costly features. The prioritization of avoidance of QCB versus other Covered Species will be determined on a project-specific basis by the County in consultation with the Wildlife Agencies.

If impacts to occupied QCB habitat are not avoidable, they will be mitigated through either (1) acquisition of occupied habitat in a defensible location elsewhere within the zone at a 2:1 ratio or (2) restoration/enhancement at a 1:1 ratio in an existing preserve area, to be determined by the County in consultation with the USFWS. Soil, plant and seed salvage from the project site also may be required, at the discretion of the County. Impacts from maintenance of public infrastructure, including access roads, will be minimized to the extent feasible.

7.8 OTHER

In the Metro-Lakeside-Jamul Segment, single-family residences on small parcels are allowed in the PMA, provided that they meet the requirements of Subarea Plan Section 4.3.4.2, including that they not interfere with achieving the goals and criteria of the Subarea Plan. If this Amendment is approved, the goals and criteria considered shall include those contained herein, including associated ordinance revisions (refer to Section 10.2).

The Otay Ranch RMP (Objective 6) includes as permitted uses within the preserve an interpretive center or centers and a native plant nursery and/or botanical garden. The siting of such facilities will be subject to the sequence of avoidance and minimization measures described above for infrastructure (see Section 7.5).

8.0 PRESERVE MANAGEMENT AND MONITORING

Habitat management is particularly important to the long-term persistence of the QCB. The dominant causes of population declines and disappearances are recognized as resulting from reductions and losses of the immediate resources critical to the species. In addition to the large proportion of habitat that has been lost, the remaining habitats have been diminished in their capacity to support the species. Its native larval host plants and nectar sources have largely been replaced by exotic plants. Thus, securing an appropriate reserve system will not be adequate in itself to ensure persistence of the species.

In response to this challenge, the County retained scientific advisors to prepare an advisory report to guide monitoring and management of the QCB. The report is attached in its entirety as Appendix D of this Amendment, and summarized as applicable in this section. The report includes (1) a description of resource and other habitat needs of the QCB and the environmental threats that put it at risk; (2) an experimental approach to better management and restoration of habitat for the species; and (3) a contribution to the development of a monitoring scheme, which can be used to assess the status and trends of the QCB and its habitats, and can guide effective and efficient management responses.

8.1 ADAPTIVE MANAGEMENT FRAMEWORK

8.1.1 Introduction to Adaptive Management

Where land is preserved under the MSCP, management is necessary to ensure that the biological values are maintained over time. The Subregional Plan requires the use of specific "Adaptive Management Techniques" directed at the conservation of individual species. "Adaptive management" refers to modifying management actions when resource monitoring indicates that changes are needed. The Subregional Plan and Subarea Plan provide for biological monitoring and preparation of an annual report, which reviews the Plan's effectiveness. Based on this review and the biological monitoring effort, adjustments in the management techniques can be made as necessary.

Incorporation of an adaptive management process is particularly important where there are information or data gaps about a species. There are significant uncertainties regarding the QCB; there is no generally agreed-upon empirical definition of habitat for the species, let alone established techniques for managing, rehabilitating or restoring habitats of varying condition. An effective adaptive management program supported by rigorous monitoring is, therefore, a critical component of this Amendment.

8.1.2 Overview of the Preserve Management and Monitoring Framework

The MSCP preserve system, including the County's portion of the system, is, and will continue to be, managed by a diverse array of agencies, private foundations and individual landowners. Specifically, the County is responsible for the management and maintenance of its existing public lands (including those over which it holds conservation easements), consistent with approved mitigation, monitoring and reporting requirements and with the MSCP. The County

also will manage and maintain lands obtained as mitigation where those lands have been dedicated to the County in fee title or easement, and land acquired with regional funds within the County's preserve boundaries. Similarly, the federal and state agencies will manage, maintain and monitor their present land holdings, as well as those they acquire on behalf of the MSCP, in a manner consistent with the MSCP. Lands in the MSCP preserve that are set aside as open space through the development process, but not dedicated (in fee or easement) to the County or other management entity, will be managed by the landowner consistent with approved mitigation, monitoring and reporting programs and/or permit requirements. Private owners of land within the preserve, who are not third party beneficiaries, have no additional obligations for the management or maintenance of their land.

Pursuant to Implementing Agreement (IA) Section 14.7, Coordination of Preserve Management, the County, in coordination with the USFWS Refuge System, has established the Habitat Management Technical Committee (HMTC). The HMTC is comprised of preserve management personnel from the state, federal and local jurisdictions, as well as water districts. The HMTC addresses technical issues of preserve management as identified in Section 5.8.3 of the Subregional MSCP. The diversity of preserve management is anticipated to strengthen the adaptive management programs because of the variety of experience and viewpoints brought to preserve management. Communication between preserve managers will be the key to developing improved management techniques and discontinuing management practices that are demonstrated not to support long-term viability of the preserve system. Management in the County's portion of the preserve will be based on the criteria established by the Framework Management Plan (FMP), and incorporated into Area-Specific Management Directives (ASMDs), under the guidance of the HMTC. The HMTC also is responsible for the coordination of public information and education, including preparation and distribution of brochures, maps and associated educational materials.

Pursuant to Section 6.3.1 of the Subregional Plan and Section 10.10, Preserve Management Program, of the IA, the County is required to submit a draft framework management plan for its portion of the MSCP Preserve to the USFWS and CDFG for review within six months of execution of the IA. The signature date for the IA was March 17, 1998. Final approval was due nine months from the effective date (December 17, 1998). The County has developed a draft FMP, but it has not yet been approved by the Wildlife Agencies. The portions of the FMP relevant to management of QCB habitat are summarized in Section 8.3, below. This Amendment builds on the existing preserve management and monitoring framework to ensure the long-term persistence of the QCB in the Subarea.

The County is responsible for the biological monitoring requirements of the Subarea Plan. The approved biological monitoring protocol requirements are cited in the "MSCP Biological Monitoring Program" document prepared by Ogden Environmental (1996). The monitoring program is intended to inform MSCP Preserve managers and staff of the general trends of wildlife use and species preservation, as well as indicate areas where special management focus is needed. It is recognized that it may be necessary to periodically revise the biological monitoring protocol as new scientific information becomes available. Any revisions to the protocol are subject to approval by the Wildlife Agencies and agreement by the participating local jurisdictions. The County is the designated repository for all data regarding preserved land

(regardless of managing entity) in the Subarea. In this capacity, the County is required to coordinate with the Wildlife Agencies to identify new monitoring methods and techniques, including adaptive management. The FMP provides that the Wildlife Agencies will assume primary responsibility for coordinating the monitoring programs, analyzing data, and providing information and technical assistance to the jurisdictions.

8.2 MANAGEMENT GOALS AND OBJECTIVES

The overall MSCP goal is to maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened and key sensitive species and their habitats. In support of this goal, overall management objectives for the County's preserve are as follows:

1. To ensure the long-term viability and sustainability of native ecosystem function and natural processes throughout the MSCP Preserve;

2. To protect the existing and restored biological resources from recreational activities that are intense, cause disturbance or are incompatible within and adjacent to the MSCP Preserve, while accommodating compatible recreational uses;

3. To enhance and restore, where feasible, the full range of native plant associations in strategic locations and functional wildlife connections to adjoining habitat in order to provide viable wildlife and sensitive species habitat;

4. To facilitate monitoring of selected target species, habitats and linkages in order to ensure long-term persistence of viable populations of priority plant and animal species and to ensure functional habitats and linkages; and

5. To provide for flexible management of the MSCP Preserve that can adapt to changing circumstances to achieve the above objectives.

Specific management objectives for the QCB are as follows:

1. To ensure the long-term viability of QCB habitat functions;

2. To encourage the persistence and re-establishment of host plants and adult nectar sources in a native habitat matrix;

3. To control and eliminate non-native vegetation in conserved QCB habitat to the extent feasible;

4. To facilitate monitoring of QCB habitats and populations for both status and trend information; and

5. To provide for adaptive management techniques that incorporate an increasing knowledge base and include appropriate responses to habitat or population decline, to ensure long-term persistence of the species.

8.3 RELEVANT MSCP MANAGEMENT MEASURES

This section summarizes the existing MSCP management measures that are anticipated to provide a benefit to the QCB. Additional management measures specifically addressing the

QCB are described below. The preserve management framework established by the MSCP provides a structure, along with funding, to implement required preserve management activities. Because the administrative structure is already in place, additional funds allocated for activities to benefit the QCB will be allocated directly to those efforts, rather than to overhead costs.

As noted above, the management directives contained in the FMP are organized by priority into two categories. Priority 1 directives are those that protect the resources in the preserve, including management actions that are necessary to ensure that the Covered Species are adequately protected. Priority 2 directives are other than those required for covered species status, and other long-term items that may be implemented during the life of the plan as funding becomes available. These priorities are intended to assist in the decisions on where to spend limited funds and direct mitigation efforts. The FMP acknowledges that modifications in the management directives may be needed over time, based on management experience.

The general management directives contained in the FMP largely focus on uses allowed within the Preserve, which are addressed in Section 7 of this Amendment. In addition, the FMP contains measures regarding invasive non-native species, which are anticipated to benefit QCB. Management directives for specific areas are included in an appendix.

As a Priority 1 management directive, exotic invasive species are to be removed from the preserve as funding or other assistance becomes available. To the extent possible, it is recommended that removal occur in a manner to control re-invasion (i.e., begin upstream/upwind). Priorities for removal are to be based on invasive species' biology, the immediate need of a specific area, and where removal could increase the habitat available for use by a covered species, such as the QCB. Impacts to sensitive species and native habitats from the removal efforts are to be minimized. Several of the specific areas addressed in the appendix also include as Priority 1 management directives coordination of an invasive non-native plant removal program with adjacent jurisdictions or in coordination with a regional MSCP management program to provide for effective, long-term management.

Further, as a Priority 2 directive, the FMP provides, when funding permits, for a focused invasive species survey with regular follow-up monitoring to assess invasion or re-invasion by exotics, and to schedule removal. The FMP suggests utilizing trained volunteers to monitor and remove exotic species as part of a neighborhood, community, school or other organization's activities program.

In a number of locations, inventory of vernal pool areas for sensitive and target species, along with assessment for enhancement/restoration needs or opportunities, general status and potential threats is included as a Priority 1 management directive. Several areas also include as a Priority 1 management directive the protection and management of areas with concentrations of *Plantago erecta* and owl's clover that may provide a food source for the QCB.

8.4 QCB HABITAT MANAGEMENT THROUGH EXPERIMENTAL MANIPULATION

As noted above, one of the key threats to the QCB is the invasion of exotic species in the remaining habitat patches. Reestablishing or enhancing native vegetation over large areas of

degraded land is, therefore, necessary for conservation of the QCB to succeed. Because of the limited amount of information currently available on how to effectively accomplish this, establishment of large-scale experiments within an adaptive framework is needed to identify methods that can (1) facilitate the recovery of severely degraded lands that are no longer occupied and (2) inform ongoing management of occupied lands.

The advisory report proposes experiments to evaluate the feasibility of the success for enhancing habitat, with the explicit aim of increasing larval hostplant and adult nectar resources. A minimum of ten 50 meter-by-200 meter (one hectare) sites, similar in shrub species composition and density, are to be selected within the experimental area(s). Each hectare is to be further divided into a block of four 50 meter-by-50 meter plots, each of which is to be randomly assigned to one of the following treatments:

1. Annual grass herbicide and forb understory restoration;

2. Annual grass herbicide and no forb restoration;

3. No herbicide application and forb understory restoration; or

4. No herbicide application and no restoration.

Herbicide treatments are to consist of applications at full label concentrations during the early to mid-growing season for exotic annual grasses (after emergence but prior to seed formation). Multiple applications may be needed annually, and are to be made for at least the first three years of study. Forb understory plant community restoration treatments would consist of broadcast seeding the appropriate number and species of seed to achieve the target community. *Plantago* and adult nectar resources should be included in the seed mixture. Seed used should be collected from surrounding appropriate species to maximize the possibility of maintaining regional and local plant genetic composition.

The effectiveness of the treatment applications would be evaluated by developing percent cover estimates of forbs (including *Plantago*, other larval hostplants and adult nectar resources), grasses and bare ground within each experimental plot. These estimates are to be made in year one following seeding, in the early spring. The effects of the re-seeding and herbicide treatments would then be statistically analyzed to determine their effectiveness. The results of this experiment would be incorporated into management of QCB habitat in the preserve.

8.5 MONITORING PROGRAM

Consistent with the USFWS Five-Point Policy (65 FR 35242), the County will provide information necessary to assess habitat impacts and conservation, and to verify progress toward the stated biological goals and objectives. To meet this policy, the County will undertake monitoring and reporting activities to assess both compliance with its permit requirements, and effectiveness of its QCB management activities, as described in the following subsections.

8.5.1 General Habitat Monitoring

As described in Section 1.6 of the Subarea Plan, the County will maintain records, by project and cumulatively, which show the location, habitat types and acres of habitat that (1) the County has authorized for development pursuant to the Subarea Plan and (2) have been conserved through mitigation based on the Subarea Plan. The County will provide this information to the Wildlife Agencies in an annual report. This vegetation type information will allow the Wildlife Agencies to make generalized determinations of potential QCB habitat impacted and conserved in the Subarea each year.

8.5.2 Species-specific Monitoring

The advisory report proposes an experimental framework to maximize rapid information gain from assessment and monitoring activities. This would be accomplished by sampling both habitat conditions and QCB population status at appropriate spatial scales across the occupied region. The proposed monitoring design would provide the basis to (1) investigate relationships between vegetation characteristics and QCB presence; (2) assess QCB status and trend within the region; and (3) assess the spatial distribution of QCB and the variation of population sizes through time. 'Status' describes the distribution of the species at one point in time, while 'trend' describes changes in abundance over time. The initial monitoring efforts would balance the need to estimate status and trend with the need to answer fundamental questions about the QCB. As more information becomes available, the monitoring program would be adapted to become more accurate and efficient.

For this effort, the border zone from Otay Mesa east to Tecate and north to near Jamul would be the subject of a nested sampling scheme. Four nodes of sampling areas are suggested: (1) West Otay, including occupied areas on east Otay Mesa and the lower western slopes of Otay Mountain; (2) Otay Lakes, including mesa tops surrounding the Otay River, lands surrounding Otay Lakes north to Proctor Valley, east to Dulzura; (3) East Otay, including Marron Valley and vicinity, east to Tecate Peak; and (4) Jamul, including SDNWR and adjacent occupied areas surrounding Sweetwater Reservoir. In each of these nodes, multiple macrosites, ranging in size from a few hectares to hundreds of hectares, would be selected based on the presence of *Plantago erecta*. At each macrosite, covariants such as distance to coast, distance to known site of occupancy, year since butterflies observed, elevation, climate (from climate surface model), slope and aspect, distance to roads or other urban land uses, and disturbance type and degree, would be recorded.

Habitat Monitoring

The habitat monitoring program is intended to improve the current understanding of the habitat and environmental correlates of QCB population size and stability. The rarity of QCB will make estimating these relationships difficult, however, because many (presumably) suitable sites are likely to be unoccupied. Within the above-noted macrosites, habitat variables would be measured at a local scale on multiple microsites. In addition to whether or not QCB are present, variables measured at each microsite would include structure and composition of the plant community; presence and density of larval hostplants, nectar resource plants and other plants that co-occur with the butterfly; amount of bare ground; and other apparent correlates of QCB

occupancy, such as presence of cryptogammic soils. Considerations involved in designing the survey methodology are described in Appendix D of this Amendment. The exact design will be determined by the County in consultation with USFWS and scientific experts.

Population Monitoring

Monitoring of QCB populations poses special problems for researchers because populations are rare, spatially clustered and exhibit erratic boom-bust population changes. In addition, estimation of QCB density is challenging because of variation in flight dates, demography and weather. The simple determination of presence or absence of QCB may provide adequate information to guide management decisions. Current consideration of metapopulation persistence is consistent with this approach. For example, a current incidence model calculates probability of extinction by the percent of occupied patches, not the size of the population in each. One reason for this is the wide annual variation in butterfly populations in response to weather. For populations considered important and relatively stable, however, some estimate of population size is desirable. The proposed population monitoring approach, therefore, combines more labor-intensive methods to obtain population estimates with less labor-intensive methods that indicate presence and probable absence.

Sites visited for the purposes of QCB population surveys are in two categories: (1) sentinel sites, which are visited every year; and (2) sites that are surveyed on a rotating schedule with visits occurring every three to five years. Butterfly populations on select sentinel sites (Sentinel A) would be subject to survey techniques designed to allow an estimation of population size. Other sentinel sites (Sentinel B) and sites surveyed using the rotating schedule would be subject to presence/absence surveys. All QCB surveys would be conducted by biologists holding a valid permit from the USFWS.

<u>Population Size Surveys</u>

Population size surveys (to be conducted at the Sentinel A sites) would be accomplished through completion of surveys throughout the flight season. This monitoring would be conducted for each sentinel site known to be occupied by QCB, or for a geographically stratified subset thereof based on resource considerations. At least one site in each node would be subject to population size surveys; if possible, one-fifth of the sentinel sites would be subject to these surveys. Experts would mark five points at each sampling location where permitted biologists would stop and count butterflies for three minutes. Observing from a series of fixed points placed sufficiently far from each other is intended to minimize double counting. Ideally, the surveys would begin when adults are first observed and continue weekly until adults are not seen for two consecutive surveys. If this is not possible due to resource constraints, however, five surveys spaced regularly throughout the season would be conducted. Only certain identifications of QCB would be included and the sex of each observed individual recorded. Counts would be conducted only in appropriate weather conditions (as defined by the then-current protocol) and those conditions recorded for each observation day.

<u>Presence Surveys</u>

Presence surveys would be conducted yearly at sentinel sites of unknown presence (or, if population size surveys are not feasible for all occupied sites, those occupied sites not subject to population surveys in a given year) and on a rotating basis at panel sites. These surveys would be conducted as walking surveys, to cover the sample site completely. Only observations of more than one individual would be counted as species presence. Repeat visits will be made only until presence on a site is established. These will be conducted at times optimally spaced throughout the flight season, and no more than five visits will be conducted in a season. Such a methodology should detect, with 0.95 probability, populations of greater than 10 observable individuals.

Monitoring Protocol Research

The above-described protocols are expert opinions of the preferred methodology, based on the current knowledge of the species. There are, however, possible variations on this methodology that could potentially improve monitoring effectiveness. If the methods described below are determined to be accurate and effective, the required monitoring protocols would be adjusted, through consultation between the County and USFWS, to incorporate one or both strategies.

Larval Surveys

Larval surveys have several potential advantages over adult surveys: (1) they provide evidence of reproduction in a specific area, so are excellent indicators of occupancy (as compared to an adult that could simply be passing through); and (2) they are tied to foodplant resources and slow moving. There are, however, also several disadvantages: (1) the risk of habitat damage may be slightly more than for adult surveys; (2) identification of larvae can only be accomplished by (relatively scarce) qualified and experienced observers; (3) it may be difficult to locate them at low densities; and (4) they may not be an effective indicator of local effective population size because of mortality occurring during pupation.

A pilot study will, therefore, be undertaken at a site occupied by QCB to investigate the relationship between larval and adult surveys. Larvae would be counted on fixed transects on a weekly basis during post-diapause development. The same site would be monitored for adult QCB population parameters following the recommended protocol. Results would be compared for the first year, and directionality of trends assessed for following years.

Distance Sampling

Distance sampling provides a method to control for differences in detectability of butterflies between sites. The distance to each individual would be recorded in addition to its presence during surveys. If certain assumptions are met, this would allow the number observed to be statistically adjusted with a detection function. The methodology would standardize the number of observations for different habitats, and for behavior of butterflies making them more or less visible to an observer. This would help to reduce the effects of weather on butterfly visibility. Research will be undertaken to determine whether this methodology is feasible, the effort required, and the actual benefits in terms of information gained that is relevant for management purposes.

8.6 ADAPTIVE MANAGEMENT RESPONSES

Statistical analysis, on both a regional and countywide basis, would be conducted on the monitoring results to discern changes in species status. The potential responses to the monitoring results analysis fall into two categories: manipulation of the species and manipulation of the habitat.

Trigger 1: Reduced number of occupied sites. This trigger will be considered to have occurred if statistically fewer sites are occupied over a six-year period. If this occurs, then the County and USFWS, in consultation with qualified scientists, would consider the distribution of sites to determine whether dispersal, habitat quality or weather conditions are likely to be explanatory factors. If declines are uniform across the County, and can be attributable to low rainfall, then no action is required. If habitat quality is likely explanatory, then the County (or applicable habitat manager) would initiate enhancement action of sites where QCB is extirpated. If dispersal seems to be the key (i.e., sites with extirpation are statistically more distant from other sites), then Trigger 2 will be applied.

Trigger 2: Extirpation at specific sites. This trigger will be considered to have occurred if a site has experienced extirpation without return for three years during which the population size at Sentinel A sites was equal to or greater than the mean population (i.e., three "good" years). If vegetation and other site variables show that vegetation has declined, then the County would initiate habitat enhancement action. If habitat quality does not appear to be the explanatory factor, then the County would reintroduce the species through translocation of wild or captive stock.

Trigger 3: Populations are stable. This condition will be considered to be the case if both population and presence-absence data are stable. In this situation, the County would initiate restoration of unoccupied sites. In this manner, resources would be directed to creation of new habitat only when declines in existing habitat are already addressed.

Within the general framework described above, the County will determine the specific management responses in consultation with the USFWS, qualified scientists and the habitat manager (if applicable). It will determine on an annual basis how best to apply the available funds, in accordance with an adaptive management program. If restoration of currently unoccupied sites is required, the County will retain a qualified restoration biologist to select (in consultation with the County and other above-noted parties) the specific locations for this work. Restoration activities will be conducted in accordance with the best available information at the time, including the results of the results of the experimentation described in Section 8.4, above.

8.7 REPORTING REQUIREMENTS

A summary of the results of the monitoring program will be incorporated into the County's annual report to the Wildlife Agencies on the status of MSCP implementation in its jurisdiction. Results of QCB surveys will be reported to the USFWS within 45 days of completion of the surveys.

9.0 RATIONALE FOR QUINO CHECKERSPOT BUTTERFLY COVERAGE

The QCB is known to occur within portions of the San Vicente, MLJ South and South County QMUs. It also has varying levels of potential to occur in other areas of these QMUs, and generally lower potential to occur in the Lake Hodges and San Pasqual QMUs. The conservation and management program proposed for the QCB in the County's Subarea would provide a biological benefit to the species when weighed against anticipated impacts. The County is proposing to provide for the long-term conservation of the species by implementing the actions described throughout this Amendment, and summarized in this section. These actions also may contribute to the recovery of the species, consistent with the Draft Quino Checkerspot Butterfly Recovery Plan (USFWS 2000).

The existing MSCP designations throughout the County Subarea provide for significant conservation of habitat for the QCB. After only six years, the County's effectiveness in assembling its preserve area already has been substantially demonstrated. Of the Category A habitat, nearly 17,000 acres, or 71 percent, either has already been preserved or is within a Hardline Preserve Area/Otay Ranch Area Where No 'Take Permits' Will Be Issued (49 percent and 22 percent, respectively). Over 47,000 acres (40 percent) of Category B habitat falls into these categories (34 percent and 6 percent, respectively). The existing Subarea Plan designations would likely result in the conservation of additional QCB habitat through the development review process in the Metro-Lakeside-Jamul Segment, and through processing of amendment areas in the other segments. For example, 23 percent of identified Category B habitat is within the PMA, at least 75 percent of which must be conserved.

Approximately 71 percent of the area within the proposed critical habitat designation is either already preserved or within hardline preserve areas (including Otay Ranch Area Where No 'Take Permits' Will Be Issued). Another less than one percent is within the PMA.

The hardline preserve areas and PMA designated under the MSCP provide for a reserve configuration that is appropriate for the QCB. They include large core areas connected by habitat linkages, and connect to habitats already conserved or planned for conservation by other jurisdictions. Specifically, the conservation of identified QCB habitat in the southern portion of the County would occur within a much larger conservation block, which totals approximately __ acres, including preserve lands in the South County QMU, MLJ South QMU, City of Chula Vista and City of San Diego, and lands held by other governmental and non-profit entities.

This amendment also conserves a large majority of the known populations of QCB. Twenty of the 23 known populations would be completely conserved, including all but two of the largest populations. Conservation levels for these two populations, Otay Ranch Village 13 and East Otay Mesa Specific Plan, will be at least 67 percent of the known sightings. Additional, currently undocumented populations will also be conserved by this Amendment through the development review process in the Metro-Lakeside-Jamul and South County Segments. The conservation of these populations will occur within large blocks of open space that will allow for free interchange of individuals between populations, critical in ensuring metapopulation stability and recovery for this species.

In addition to the conservation that has occurred through previous acquisitions, or that is anticipated to occur based on the current MSCP designations, this Amendment is anticipated to provide additional conservation of habitats important to the QCB. This would occur in the form of both (1) amendments to MSCP designations in three locations and (2) establishment of procedures for reviewing future development proposals outside of hardline areas to specifically consider QCB habitat. Specifically, the proposed revisions to MSCP designations would occur in Otay Ranch Villages 13, 14 and 15. As described in Section 5.2 and 5.3 of this Amendment, the proposed revisions would provide for the conservation of additional QCB populations and habitats, without adversely affecting other covered species. Taken together, these three proposed boundary adjustments would preserve two additional populations (consisting of 20 documented sightings).

For areas that are not hardlined, this Amendment includes a number of procedures that must be followed during the development review process. This includes survey, minimization and mitigation requirements, as described in Section 5.2 of this Amendment. These procedures will ensure that occupied QCB habitat is identified. Depending upon whether the habitat is in an area considered to have long-term potential for conservation, it would either be substantially preserved or impacts to it mitigated. Requirements are specifically tied to each QMU, such that the range of the species would be preserved through this process. Minimization requirements also would be instituted to ensure that impacts from permitted activities within the preserve (e.g., recreation, infrastructure) are minimized as appropriate.

This Amendment also, however, recognizes that set-aside of habitat will likely not be sufficient to sustain the QCB in the long term. As described in Section 8 of this Amendment, QCB habitats are subject to invasion by non-native species that threatens to extirpate host and nectar plants and, with them, the QCB. In order to address this threat to the species, this Amendment includes an ambitious adaptive management and monitoring program. These measures are aimed at determining which management/restoration techniques best provide for appropriate plant cover in QCB habitats, monitoring the QCB and its habitat to determine status and trends, and specifying triggers that require a change in management actions. As part of this Amendment (see Section 10), the County is committing funding to ensure that this management and monitoring program is implemented.

Given the plan's protection of occupied and potential future QCB habitat, and the proposed measures to ensure that the ability of that habitat to support QCB is sustained over the long term, approval of this Amendment would not appreciably reduce the likelihood of the species' long-term survival in the wild or otherwise jeopardize the continued existence of the QCB in the Subarea. As proposed, this Amendment would contribute to ensuring this species' long-term persistence.

10.0 AMENDMENT IMPLEMENTATION

The Board of Supervisors has entered into an Implementing Agreement (IA) with the Wildlife Agencies for the County Subarea Plan. The IA is the contract between the County and the Wildlife Agencies regarding their individual and collective roles in implementing the County Subarea Plan. The IA will be revised in conjunction with this Amendment to ensure that the measures specified herein with regard to the QCB will be implemented for 50 years from the effective date of the original IA and that federal take authorizations will be extended to this species for the same period. The proposed revisions to the IA are attached to this Amendment as Appendix E.

10.1 PRESERVE ASSEMBLY

The Preserve will be assembled primarily through the development entitlement process. As described in Subarea Plan Section 1.13, preserve lands may be held by the County in fee, or conservation easements that allow access for management purposes may be granted jointly to the County and the Wildlife Agencies. Easements for preserve conservation will be established in a manner that will preclude the ability to revoke said easement(s) without the consent of the County and the Wildlife Agencies. This Amendment does not affect the preserve ownership and conveyance discussions contained in the Subarea Plan. The status of preserve assembly is summarized in Section 5 of this Amendment.

Separate from, but complementary to, this Amendment, the Board of Supervisors recently revised the Otay Ranch Conveyance Plan. The revisions to the Conveyance Plan enlarged the area of the preserve within which the first group of conveyances must be made to encompass all of the high-priority areas identified in the adopted Otay Ranch RMP. The revised Conveyance Plan also includes provisions that would allow property owners whose development projects are located outside of Otay Ranch the option of purchasing and conveying mitigation lands within the Otay Ranch preserve, and provides standards for how such lands will be managed and conveyed to the preserve. By allowing more parties to participate in the conveyance of lands to the preserve, dedication of the initial conveyance area may occur more quickly.

The revised Conveyance Plan is anticipated to provide several benefits to the QCB. First, the vast majority of QCB locations are included in the initial conveyance area (Figure 10-1). The Board of Supervisors Agenda Item specifically acknowledged the importance of conveying these habitats to the preserve early so that they fall under the management responsibility of the Otay Ranch Preserve Owner/Manager (POM), so that invasion by non-native weed species may be controlled. Furthermore, the Conveyance Plan allows for areas with restoration potential to be conveyed early in order to begin long-term research and restoration activities sooner. Some of these areas have potential for habitat creation/restoration for the QCB. In the event that, in the early years of Preserve acquisition, the POM does not have adequate revenues to manage the lands, the Conveyance Plan provides that those parties conveying lands to the POM agree to maintain them "as is" until the POM can assume its management duties.

10.2 BIOLOGICAL MITIGATION ORDINANCE

The County's adopted BMO is intended to achieve the conservation goals set forth in the Subarea Plan. The QCB was included on the original list of Rare, Narrow Endemic Animal Species Within the MSCP Subarea, BMO Attachment D, even though it was not included on the covered species list. Upon adoption of this Amendment, the BMO will be amended to reflect its provisions. The draft revised BMO is included as Appendix F to this Amendment. In summary, the revisions include the following:

- Article III.A.9 and 10 (Exemptions)—Findings for exemption from the requirements of the BMO shall be amended to include avoidance of all occupied QCB habitat (not just critical populations)

- Article VI.A.1 (Determination of Whether Land Qualifies as a Biological Resource Core Area)—Criteria for determining if impact and mitigation sites are part of a Biological Resource Core Area shall be amended to include viable linkages between known QCB populations within preserve or PMA areas

- Article VII.A.2 (Species-based Mitigation)—Requirements for sensitive animal populations shall be revised to reflect the QCB avoidance and mitigation measures specified in this Amendment

10.3 PLAN AMENDMENT

For lands designated in the Subarea Plan as Major and Minor Amendment Areas, the County's take authorizations do not apply until the applicable amendment process has been completed. For those properties designated as Major or Minor Amendment Areas in the Subarea Plan, but that have resolved the conditions for QCB coverage under this Amendment (as described in Section 5.2.4), the Major or Minor Amendment process, as applicable, will be deemed to have been completed upon adoption of this Amendment. Those Major or Minor Amendment Areas not specifically resolved by this Amendment must still complete the process at the time a specific project is proposed. When such subsequent amendments are proposed, the criteria considered shall include conformance to the intent and requirements of this Amendment, subject to approval by the County, USFWS and CDFG.

10.4 TAKE AUTHORIZATIONS AND ANNEXATIONS

The County of San Diego Subarea, the area for which take authorization will be granted, consists of the territory located within the unincorporated area, and as such may be adjusted for annexations from time to time. QCB take authorization will not be extended to areas annexed out of the County.

10.5 PRESERVE BOUNDARY ADJUSTMENTS

Boundary adjustments shall be prioritized by the County and Wildlife Agencies and processed in a timely manner, with the minimum amount of documentation legally required. The applicant, County and Wildlife Agencies will work together to determine any impacts that the boundary adjustment may have on other covered species or biological resources. Special consideration

shall be given to Critical Populations of Covered Species, Narrow Endemics from the MSCP Portion of San Diego County, and Rare, Narrow Endemic Animal Species Known from San Diego County within the MSCP Subarea (Subarea Plan Tables 4-4 through 4-6).

If it is determined that the adjustment will result in the same or higher biological value of the preserve area, no further action (including plan amendment) will be required. If, however, substantial impacts would occur to these species, the Subarea Plan must be amended (or individual take authorization obtained). The parties will have 60 days from the initiation of discussions regarding a boundary adjustment to determine whether such an adjustment is possible without unacceptable impacts to other species and a loss of development value. If such an adjustment is not possible, the County and wildlife agencies shall either (1) allow acquisition and/or restoration/enhancement of QCB habitat elsewhere within the zone as an alternative to the boundary adjustment or (2) provide for purchase of the property (or applicable portion thereof) at fair market value within a reasonable time period.

Any adjustments to the preserve boundary will be disclosed in any necessary environmental documentation prepared for the specific project. An evaluation of the proposed boundary adjustment will be provided in the biological technical report and summarized in the appropriate sections of the environmental document, if applicable.

10.6 CONSERVATION AND MITIGATION BANKS

Section 1.16 of the Subarea Plan provides that the County and Wildlife Agencies will allow off-site mitigation, where required of projects within the County, within mitigation banks established pursuant to Board of Supervisors Policy I-117, that are located within the Subarea Plan. This policy also will apply to QCB habitat to the extent that off-site mitigation is allowed under Section 5 of this Amendment.

11.0 PRESERVE MANAGEMENT FUNDING

The ESA and implementing regulations (50 CFR 17 and 222) require that HCPs specify the measures the permittee will adopt to ensure adequate funding for the HCP. Because of the structure of the Subarea Plan (i.e., primarily reliant upon dedication of lands to the preserve in association with development approvals), funding requirements are limited to preserve management and monitoring requirements. This section, therefore, describes existing and proposed funding mechanisms, estimates costs to implement the management and monitoring measures required by this Amendment (as described in Section 8), and provides assurances that adequate funding will be made available.

11.1 OVERVIEW OF FUNDING MECHANISMS

The IA (Section 10.9) provides that the County is responsible for managing or ensuring the management of lands which it owns, acquires, or obtains as mitigation for the MSCP. Typically, the County ensures this by requiring the project proponent to provide funding for management of mitigation lands, such that County funding is not required. A common approach is the provision of endowments to fund the activities of the designated preserve managers. As another example, a Communities Facilities District (CFD 97-2) was created in 1998 to generate revenue to fund the maintenance, management and biological monitoring activities required under the Otay Ranch Resource Management Plan and Otay Ranch Planning Component Framework Management Plan.

Federal and state agency lands dedicated to the preserve, or acquired by such agencies for the preserve, will be monitored and managed by them. The Otay Ranch Subarea Plan Agreement provides that the parties will support the establishment of a federal wildlife refuge for the designated Otay Ranch areas east of the Otay Reservoir. Lands conveyed to the refuge would be the maintenance responsibility of USFWS or its designee, without financial assistance from the County.

The MSCP Framework Plan provided for the establishment of a regional funding program. This mechanism has not, however, yet been established. Information regarding the intended regional program is contained in IA Section 11 and MSCP Subregional Plan Section 7.

11.2 ESTIMATED COSTS OF PLAN IMPLEMENTATION

TO BE DETERMINED

11.3 FUNDING ASSURANCES

The County MSCP Implementing Agreement (Section 9.7.C) provides that, in adding species to the covered species list for which the conservation measures in the MSCP are not adequate, preference in developing additional conservation measures will be given to habitat management practices and opportunities within the preserve, using existing management resources. **THE ABILITY FOR THE PROPOSED PROGRAM TO BE ACCOMPLISHED USING EXISTING MANAGEMENT RESOURCES (FUNDING) IS TO BE DETERMINED.**

ADDITIONAL FUNDING ASSURANCES WILL BE DEVELOPED IF NECESSARY.

12.0 ASSURANCES

USE OF EXISTING MSCP ASSURANCES

The IA for the County's MSCP Subarea Plan (Section 9.0) provides assurances regarding the potential for additional conservation requirements. In summary, the IA states that the wildlife agencies will not require the County or a third-party beneficiary to commit any additional land, land restrictions or financial compensation for covered species, provided that the County is in compliance with its obligations under the Subarea Plan and IA. Moreover, the wildlife agencies agreed not to seek any additional conservation measures for covered species except where "extraordinary circumstances" adversely change the population of a covered species. The wildlife agencies have the burden of demonstrating that extraordinary circumstances exist, and may not finalize such a finding unless they determine, following consultation with the County, that existing measures available under the MSCP and Subarea Plan cannot adequately address the situation and that additional conservation measures are necessary. If determined to be necessary, additional conservation measures will emphasize changes in the preserve management or acquisition programs, and may not involve the commitment of additional land, land restrictions of financial compensation on the part of the County or third-party beneficiaries without their consent. By adding the QCB as a covered species, and providing adequate conservation measures as described, this Amendment and associated IA amendments extend the IA's assurances regarding covered species to the QCB.

13.0 ALTERNATIVES

As required under state and federal regulations, the County has considered alternatives to the proposed Amendment. Provided below are the options considered.

13.1 NO AMENDMENT ALTERNATIVE

Under this Alternative, no Amendment to the County's existing Subarea Plan would be processed. As a result, the QCB would not be added as a covered species to the Subarea Plan, and landowners within the boundaries of the Subarea Plan would not receive third party beneficiary status for this species. From a conservation standpoint, the two most important differences between this alternative and the proposed Amendment are (1) linkages between QCB populations that are not occupied in the year surveyed would not be subject to consideration during permit processing in areas that are not hardlined (i.e., Metro-Lakeside-Jamul Segment and amendment areas) and (2) habitats set aside under the Plan would not be managed and monitored for the specific benefit of the species. As described in Section 8 of this Amendment, currently suitable QCB habitats are likely to become unsuitable, resulting in extirpation of the species, if specific management is not undertaken.

Permitting of potential take of the QCB would be accomplished through negotiations between individual landowners and the USFWS under Section 7 or 10 of the ESA. Individual projects potentially could avoid take of the species or receive take authorization through minimization and mitigation of impacts. Avoidance of impacts could, however, result in isolated patches of habitat that would likely not function in the long-term, given the metapopulation dynamics of the species.

13.2 NO MAJOR AMENDMENT INCLUSION ALTERNATIVE

This Alternative would process the Amendment as proposed, except that it would not include the processing of Major Amendments for Otay Ranch Villages 13, 14 and 15. In the immediate future, this would result in the assured conservation of less of Category A and Category B habitat, along with one fewer population and a portion of another population of QCB. There also would be no immediate take. Most importantly, there would be no habitat management; current cattle and sheep grazing that have occurred on the sites would continue. The ultimate configuration of conservation/ development on these properties would be determined through individual negotiations between the landowners, USFWS, CDFG and the County, and cannot be predicted at this time.

14.0 SOURCES

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